

Wright State University

CORE Scholar

Doctor of Nursing Practice Program Projects

College of Nursing and Health Student
Publications

2019

Evaluating an Evidence-Based Suicide Risk Assessment Intervention for an Inpatient Mental Health Hospital Unit

Tyler D. Green

Wright State University - Main Campus, tyler.green@wright.edu

Follow this and additional works at: https://corescholar.libraries.wright.edu/nursing_dnp



Part of the [Mental and Social Health Commons](#), and the [Nursing Commons](#)

Repository Citation

Green, T. D. (2019). Evaluating an Evidence-Based Suicide Risk Assessment Intervention for an Inpatient Metal Health Hospital Unit. Wright State University, Dayton, OH.

This Doctoral Project is brought to you for free and open access by the College of Nursing and Health Student Publications at CORE Scholar. It has been accepted for inclusion in Doctor of Nursing Practice Program Projects by an authorized administrator of CORE Scholar. For more information, please contact library-corescholar@wright.edu.

EVALUATING AN EVIDENCE-BASED SUICIDE RISK ASSESSMENT INTERVENTION
FOR AN INPATIENT MENTAL HEALTH HOSPITAL UNIT

A doctoral project submitted in partial fulfillment of the
requirements for the degree of
Doctor of Nursing Practice

By

Tyler D. Green MSN, APRN, PMHNP-BC

DNP Project Team

Dr. Deborah Poling PhD, FNP-BC, CNE (chair)

Dr. Susan Rice PhD, RN, CPNP-PC, APRN-CNS

Dr. Misty M. Richmond PhD, PMHNP-BC

2019

Wright State University College of Nursing and Health/
University of Toledo College of Nursing

This page is intentionally left blank

Dedications

This DNP project is dedicated to my wife Sucheta. Thank you for standing by my side and supporting me through my nursing education journey. I love you and look forward to the many adventures ahead of us.

Acknowledgements

I would like to thank the following people who I consider invaluable for their encouragement, support, and guidance of me throughout my DNP endeavor:

To S. Jean Budding for supporting and guiding me in my development as a mental health nurse practitioner. Your encouragement for me to pursue further education was fundamental to me undertaking this DNP project.

To Dr. John R. Cutcliffe for supporting and mentoring me in my development as a mental health nurse and academic. Your views and approach to the care of people with mental health problems has profoundly influenced my life and work. I appreciate you allowing me to use the NGASR for the purposes of this DNP project.

To my family for your encouragement and support of me obtaining my DNP. You listened and reassured me when I was not certain I would have the strength to finish. You often put your lives on hold and were understanding when I could not be there because I needed to work on my project.

To Dr. Deborah Poling for being my DNP project chair. I greatly appreciate your support with reviewing my project and assisting with navigation through the program requirements.

To Dr. Misty Richmond and Dr. Susan Rice for agreeing to be on my DNP project team. I appreciate you taking the time to review and provide helpful feedback to improve my project.

Abstract

Suicide is a worldwide problem that claims over 800,000 lives annually (NIMH, 2017; WHO, 2017). Almost one third of mental health professionals feel they have received inadequate training on suicide prevention (Jahn, Quinnett, & Ries, 2016). Asking mental health clients to agree to a no-suicide contract is a widely-used practice in the inpatient mental health care setting but lacks efficacy and can have ethical implications (Bryan et al., 2017). The NGASR was selected from a variety of suicide risk assessment tools for incorporation into a public inpatient mental health hospital unit in the Midwestern U.S.A. The NGASR is unique in that it describes evidence-based variables known to increase a person's suicide risk, does not coerce mental health clients, and attempts to help nurses improve their clinical judgment when assessing suicide risk (Cutcliffe & Barker, 2004). The EBPI model was used to guide this DNP project, which asked "Among nurses working with mental health clients in the inpatient mental health hospital setting (P) how does the use of the NGASR (I) compared to the use of a no-suicide contract (C) impact nursing practice and the quality of care for mental health clients (O) over a four-month period of time? (T)."

Twenty-two out of sixty nurses (36.7%) completed the survey at the end of the DNP project. Nurses felt the process of changing to the NGASR was neutral (31.82%) to negative (50%) with statements that the NGASR was more "time-consuming" and screened more mental health clients as a "high risk" for suicide than the no-suicide contract. Nurses provided neutral (13.64%) to positive (59.09%) responses when asked how the NGASR changed their practice and mental health client care. Nurses reported the NGASR increased critical thinking, awareness, and insight into the mental health clients' problems and history. During the two months of NGASR incorporation the use and cost of safety sitters decreased by 44.44% and

76.76% (\$10,897.71) respectively. It is recommended the NGASR undergo further incorporation and study on inpatient mental health hospital units to determine if utilizing the EHR is able to mitigate nurses' perception of increased workload.

Keywords: NGASR, no-suicide contract

Table of Contents

List of Tables.....	xi
Chapter I. Problem.....	1
Problem Statement.....	5
Chapter II. Evidence.....	6
Evidence-Based Framework.....	6
Literature Review.....	9
Evaluation of the Evidence.....	10
Level and Quality of Evidence.....	17
Strength of Recommendation.....	25
Summary.....	26
Chapter III. Project Implementation.....	28
Setting and Population of Interest.....	28
Resource Identification.....	28
Ethical and Legal Considerations.....	29
Stakeholders.....	29
Barriers to Implementation.....	30
Facilitators to Implementation.....	31

Table of Contents (Continued)

Process for Implementation.....	32
Outcome Measures.....	33
Gantt Chart.....	35
Summary.....	35
Chapter IV: Project Evaluation.....	37
Data Collection Process and Procedures.....	37
Evaluation of Implementation.....	38
Evaluation of Impact.....	38
Statistical Procedures for Data Analysis.....	38
Summary.....	39
Chapter V: Project Findings.....	40
Findings Related to Implementation.....	40
Findings Related to Impact.....	42
Quantitative Outcome Measures.....	44
Clinical Significance.....	45
Factors Facilitating or Limiting Outcomes.....	47
Recommendations for Future.....	48

Table of Contents (Continued)

Dissemination.....	49
Conclusion.....	49
References.....	51
Appendix A: Permission to Use NGASR.....	55
Appendix B: Nursing Survey.....	56
Appendix C: Literature Evaluation Tables.....	57
Appendix D: Table of Evidence Levels.....	64
Appendix E: Table of Recommendation for Practice Change.....	65
Appendix F: Expert Appraisal Form.....	68
Appendix G: Mixed Method Appraisal Form.....	71
Appendix H: Cross-Sectional Appraisal Form.....	74
Appendix I: Guideline Appraisal Form.....	78
Appendix J: Case-Control Appraisal Form.....	82
Appendix K: Grading the Body of Evidence.....	86
Appendix L: Judging the Strength of a Recommendation.....	87
Appendix M: Agency Permission Form.....	88
Appendix N: Wright State University IRB.....	89

Table of Contents (Continued)

Appendix O: Agency IRB.....	90
Appendix P: Barriers.....	91
Appendix Q: Facilitators.....	92
Appendix R: DNP Project Economic Analysis.....	93
Appendix S: Outcome Measures.....	94
Appendix T: NGASR Paper Chart Form.....	96
Appendix U: Nursing NGASR Education Presentation.....	97
Appendix V: Gantt Chart.....	116

List of Tables

Table	Page
1. The Nurses' Global Assessment of Suicide Risk (NGASR).....	4
2. Databases Searched and Data Abstraction.....	10
3. Literature Review Synthesis Table.....	11
4. Strength of Recommendation Table.....	26
5. DNP Project Implementation Summary Table.....	42
6. DNP Project Impact Summary Table.....	44
7. Outcome Measures.....	45

Chapter I: Problem

Suicide is a worldwide problem that claims over 800,000 lives annually and is the second highest cause of death for people between the ages of 15 and 29 (National Institute of Mental Health (NIMH), 2017; World Health Organization (WHO), 2017). In the U.S.A., suicide has a toll of approximately 40,000 lives annually (CDC, 2017). The National Alliance on Mental Illness (2017) details that 90% of completed suicides are attributable to the presence of mental health problems, which can result from “genetic, biological, environmental, and psychological factors” (NIMH, 2016, para. 12). Many factors have been shown to increase suicide risk including having a mental health diagnosis, a prior suicide attempt, a family history of mental health problems and/or suicide, and personal loss (NIMH, 2015). While these factors correlate with increased suicidal risk, they are not always predictive and it is also important to include nursing clinical judgment when assessing inpatient mental health clients. This clinical judgment can derive from a combination of education and experience in the mental health inpatient clinical setting and may be facilitated through the use of a standardized suicide risk assessment tool (Façanha, Santos, & Cutcliffe, 2016; Kozel, Grieser, Abderhalden, & Cutcliffe, 2016).

The accurate assessment and prevention of mental health client harm is a primary function of mental health nurses in the inpatient hospital setting (Façanha et al., 2016; Kozel et al., 2016). It is reported that almost one third of mental health professionals feel they have received inadequate training on suicide prevention (Jahn, Quinnett, & Ries, 2016). Mental health clients on inpatient mental health hospital units “have a suicide rate significantly higher than the general population” (Kozel et al., 2016, p. 409). Nurses who have not developed their ability to assess and perform interventions for mental health client suicide risk may miss

essential clinical information that can place the mental health client in a position to complete a suicide.

Asking mental health clients to provide a verbal no-suicide contract is presently a practice widely used on inpatient mental health hospital units to determine the severity of a mental health client's suicide risk (Bryan et al., 2017; Puskar & Urda, 2011). The mental health clients are asked if they are able to agree to not commit suicide and act to seek help if they have worsening thoughts of suicidal ideation (Puskar & Urda, 2011). This practice of using the no-suicide contract has been followed since 1973 with little evidence to show that it has efficacious clinical utility (Bryan et al., 2017; Farrow, 2003; Lewis, 2007; McMyler & Prymachuk, 2008; Puskar & Urda, 2011). Mental health clients may feel pressure to agree to remain safe or try to use the contract as a way to get released from a hospitalization (Puskar & Urda, 2011). McMyler and Prymachuk (2008) state that many mental health clients feel uncomfortable with the responsibility of the no-suicide contract. McMyler and Prymachuk (2008) further describe the fact that many nurses initiate a no-suicide contract to relieve their own anxiety regarding the mental health client's safety or as a way to obtain legal protection for themselves in the event of mental health client suicide.

The use of a standardized suicide risk assessment tool that is validated through empirical testing is "an important secondary preventative measure that can contribute to lowering suicide rates in psychiatric units" (Kozel et al., 2016, p. 410). The suicide risk assessment tool should additionally promote nursing clinical judgment while assessing a mental health client's risk of suicide and deciding nursing interventions. Almost one third of mental health professionals feel they have received inadequate training on suicide prevention and are urgently needing an instructive, easy-to-use suicide risk assessment tool (Jahn, Quinnett, & Ries, 2016). The

Emergency Nurses Association (2012) developed a clinical practice guideline that lists suicide risk assessment tools considered for the inpatient hospital setting. After review of this list, which includes the Beck Suicide Intent Scale, the Columbia Suicide Screen, the SAD PERSONS scale, and the Suicidal Ideation Questionnaire, the Nurses' Global Assessment of Suicide Risk (NGASR) was selected for this DNP project. There are multiple reasons for the selection of the NGASR over other suicide risk assessment tools. The NGASR is unique in that it is a psychometric instrument that was developed for nurses based on existing evidence of known variables that increase a person's risk of suicide with the intent of helping nurses improve their clinical judgment and ability to complete suicide risk assessments (Cutcliffe & Barker, 2004). An additional benefit of using the NGASR over many other assessments is that it does not coerce mental health clients or require their cooperation during its application. The NGASR also shows distinction from other suicide risk assessment tools in that it does not consider all variables as equal predictors of suicide risk. An example would be a mental health client having a specific plan for suicide, which would carry a higher predictive value than having thoughts of suicide without a specific plan (Jordan & McNiel, 2018). According to Cutcliffe and Santos (2012), this instrument has broad clinical utility for measuring suicide risk and has been widely-used in the USA and several other countries.

The NGASR measures fifteen variables that are identified in the literature as significant suicide risk indicators and are weighted according to each item's potential influence on a person's decision to commit suicide, see Table 1 (Cutcliffe & Barker, 2004). Variables such as age and gender were not included due to those variables being an inconsistent measure of suicide risk between populations (Cutcliffe & Barker, 2004). The NGASR is similar in length to other

suicide risk assessment tools and is not considered too time consuming for nurses to use in clinical practice (Cutcliffe & Barker, 2004).

Table 1

The Nurses' Global Assessment of Suicide Risk (NGASR)

Predictor variable	Value
Presence/influence of hopelessness	3
Recent stressful life event, for example, job loss, financial worries, pending court action	1
Evidence of persecutory voices/beliefs	1
Evidence of depression/loss of interest or loss of pleasure	3
Evidence of withdrawal	1
Warning of suicidal intent	1
Evidence of a plan to commit suicide	3
Family history of serious psychiatric problems or suicide	1
Recent bereavement or relationship breakdown	3
History of psychosis	1
Widow/widower	1
Prior suicide attempt	3
History of socio-economic deprivation	1
History of alcohol and/or alcohol misuse	1
Presence of terminal illness	1
Total	

Reprinted from "The nurses' global assessment of suicide risk (NGASR): Developing a tool for clinical practice," by J. R. Cutcliffe and P. Barker, 2004, *Journal of Psychiatric and Mental Health Nursing*, 11(4), 393-400. Adapted with permission.

When applying the NGASR to inpatient mental health hospital unit nursing practice, the resulting score allows for classification into four categories of risk that have corresponding engagement levels. These score categories include low (<5 – Level 4), intermediate (6-8 – Level 3), high (9-11 – Level 2), and very high (>12 – Level 1) suicide risk. Mental health clients assessed to be in engagement level 1 should be offered the highest available level of support, which may involve the use of a safety sitter. Mental health clients in engagement level 2 are deemed to be in need of standard support paired with every 15 minute visual safety checks. Mental health clients in engagement level 3 would require a lower level of support paired with the nurse checking on the client at minimum three times a day. Finally, mental health clients in engagement level 4 should be met with at least daily and efforts should be made to transfer the

client to receive outpatient care (Barker & Buchanan-Barker, 2005). Permission for the use of the NGASR for this DNP project is found in Appendix A.

Problem Statement

The following PICOT question will be used to guide this DNP project: Among nurses working with mental health clients in the inpatient mental health hospital setting (P) how does the use of the NGASR (I) compare to the use of a no-suicide contract (C) impact nursing practice and the quality of care for mental health clients (O) over a four-month period of time? (T).

Chapter II. Evidence

This section will first describe the Evidence-Based Practice Improvement (EBPI) model and discuss utilizing this model as the evidence-based framework to guide this DNP project.

This section further describes an exhaustive literature review and evaluation of the evidence using the Let Evidence Guide Every New Decision (LEGEND) critical appraisal tool. Finally, this section speaks to the strength of the recommendation for incorporating the change to nursing clinical practice.

Evidence-Based Framework

The EBPI model by Levin et al. (2010) would serve as an effective framework for guiding the implementation of this DNP project. The EBPI model was selected due to its emphasis on incorporating evidence into the clinical setting while attempting to improve nursing practice and client outcomes. This is reflected in the attempt to incorporate the use of the evidence-based NGASR on an inpatient mental health hospital unit with the intention of improving nursing practice when assessing mental health client suicide risk and determining nursing interventions.

The first step of the EBPI model is to describe the problem (Levin et al., 2010). As stated earlier in this paper, suicide is a worldwide problem that affects many people. Asking a mental health client to agree to a no-suicide contract as method for assessing suicide risk is widely utilized on inpatient mental health hospital units but has been determined to not be effective or based in evidence (Farrow, 2003; Lewis, 2007; McMyler & Prymachuk, 2008; Puskar & Urda, 2011). The application of the no-suicide contract can have ethical concerns for mental health clients and does not assist the nurse with incorporating clinical judgment when deciding nursing

interventions. The second step of the EBPI model is to formulate a focused clinical question (Levin et al., 2010), which is commonly done in the PICOT format. As previously described in this paper, the project PICOT seeks to determine whether the use of the NGASR compared to the no-suicide contract is able to have an effect on nursing practice and the quality of care for mental health clients on an inpatient mental health hospital unit over a four-month period of time. The third step of the EBPI model entails a search for evidence (Levin et al., 2010). An exhaustive review of available literature related to the NGASR as a practice intervention was undertaken and produced evidence that may be used to further inform the clinical question. The fourth step of the EBPI model is to appraise and synthesize evidence (Levin et al., 2010). Critical appraisal and synthesis of available evidence related to the NGASR was undertaken to determine the strength of the evidence being used to support the DNP project. The fifth step of the EBPI model is to develop an aim statement (Levin et al., 2010). An aim statement specific to a desired outcome of the focused clinical question would be: Reduce the unnecessary use of safety sitters with mental health clients by 20% over two months. The sixth step of the EBPI model is to engage in small tests of change (Levin et al., 2010), which incorporate the Plan, Do, Study, Act (PDSA) cycle (The W. Edwards Deming Institute, 2016). The cycle consists of four phases. In the “plan” phase, preparation was completed for DNP project implementation (The W. Edwards Deming Institute, 2016). For this DNP project, the “plan” phase involved communicating the intent of the DNP project with the inpatient mental health hospital nursing administration. The inpatient mental health hospital nursing administration agreed to record the frequency (number of times safety sitters are initiated) and length (in hours) of safety sitters used by mental health nurses who utilize the no-suicide contract in their practice for two months before and two months after the NGASR practice change. To provide context for the use of safety sitters, information

on the total number of mental health clients admitted to the inpatient mental health hospital unit, the average length of inpatient mental health hospital unit client stay, and the incidence of completed mental health client suicide was to be included for two months before and two months after the planned intervention. Assessment and planning of nursing staff educational needs involved communicating with and working alongside the inpatient mental health hospital unit nurse educator. The “do” phase consists of the actual incorporation of the planned intervention, which for this DNP project would be implementing the NGASR into nursing practice (The W. Edwards Deming Institute, 2016). Education was provided to the nursing staff through a recorded Microsoft® Office PowerPoint® presentation on the use and implications of the NGASR as an alternative to asking the mental health client to agree to a no-suicide contract. After the education was completed, the nurses were asked to incorporate the NGASR in the daily assessment of mental health clients to assist with determining the need for a safety sitter. Two months after incorporation of the NGASR on the inpatient mental health hospital unit, the nursing staff were asked to complete a voluntary de-identified written survey. The survey asked the nurse’s years of experience completing suicide risk assessments, the nurse’s opinion on the process of change to incorporate the NGASR into their practice, and the nurse’s opinion on how using the NGASR was able to change their practice and the quality of care received by mental health clients. The nursing survey used for this DNP project is found in Appendix B. The “study” phase consisted of analyzing the results of the intervention to determine if implementation of the NGASR on the inpatient mental health hospital unit was able to change nursing practice, change mental health client care quality, and have an effect on the frequency and length of safety sitters used with mental health clients (The W. Edwards Deming Institute, 2016). The information learned in the “study” phase will lead to the “act” phase, where results

have the potential to be incorporated or used to re-evaluate the goal (The W. Edwards Deming Institute, 2016). The seventh and final step of the EBPI model is to disseminate best practices (Levin et al., 2010). This DNP project findings will be disseminated in a report to the administrative personnel and nursing staff at the hospital where the nursing practice change took place. Further dissemination may occur through presentation at a national nursing conference and publication in a peer-reviewed professional journal. The DNP project findings will also be submitted to Wright State University and the University of Toledo for partial fulfillment of a Doctor of Nursing Practice degree.

Literature Review

A review of the literature was conducted to determine the level of evidence surrounding the use of the NGASR as a clinical tool to assist with developing nursing clinical judgment when assessing mental health client suicide risk. Searches were limited to research articles published between January 2004 and August 2018. The databases searched comprised of CINAHL Plus with Full Text, MEDLINE with Full Text, SocINDEX with Full Text, ScienceDirect, PsycINFO, the Directory of Open Access Journals, and Google Scholar. The literature was searched using “Nurses’ Global Assessment of Suicide Risk” in all text. Preference was given to research articles addressing use of the NGASR in the United States of America, but this was not a limiting factor. Research articles were excluded if they were not written in the English language. One hundred and sixty six results were generated using the criteria previously mentioned. Of the initial results, twenty three results were designated as having possible significance to the DNP project PICOT question. The reference sections of these twenty three results were hand-searched for additional results of interest. In total, seven research articles were selected that focused on evaluation of the NGASR’s psychometric properties for use on an inpatient mental health

hospital unit. Table 2 provides further delineation of the databases searched and the data abstraction process for this project.

Table 2

Databases Searched and Data Abstraction

Date of search	Keyword(s), subject headings, MeSH terms used	Database/source used	Limits applied	Article Selections		
				# of Hits	# Reviewed	# Keeper articles for critical appraisal & evaluation
4/28/17	Keywords “Nurses’ Global Assessment of Suicide Risk” in all text	CINAHL Plus with Full Text, MEDLINE with Full Text, SocINDEX with Full Text, Science Direct, PsychINFO, Directory of Open Access Journals	2004-2017	36	11	4
4/28/17	Keywords “Nurses Global Assessment of Suicide Risk” in all text	Google Scholar	2004-2017	130	12	3

Evaluation of Evidence

The evaluation of evidence is important to ensure that selected research articles are valid, accurate, and relate to the problem statement. Literature evaluation tables for the seven research articles were created and are available to view in Appendix C. Items of interest for the seven “keeper” articles were synthesized and are presented in Table 3. These items speak to the

NGASR as both a valid and reliable suicide risk assessment tool for inpatient mental health hospital unit practice settings.

Table 3

Literature Review Synthesis Table

1 st Author/Year	Describe NGASR as Having High Face, Construct, Content, and/or Criterion Validity	Describe NGASR as Having High Interrater Reliability	Support Use of NGASR for Mental Health Clinical Practice	Address Nursing Clinical Judgment for Suicide Risk Assessment
Cutcliffe (2004)	X	#	X	X
van Veen (2015)	X	X	X	X
Façanha (2016)	X	#	X	X
Kozel (2016)	#	X	X	X
RNAO (2009)	#	#	X	#
ENA (2012)	X	#	X	#
Gramaglia (2016)	#	#	X	#
X = Present # = Not Mentioned				

One research study that supports this project is by Cutcliffe and Barker (2004). The aim of this study was to introduce the NGASR and utilize two expert panels to analyze face and criterion validity in addition to discussing use in the clinical setting. The authors of the study both have experience as registered mental health nurses and are doctorally-prepared professors of mental health nursing. These authors have published mental health textbooks and multiple articles in peer-reviewed mental health journals. One author additionally works as a psychotherapist (Barker & Buchanan-Barker, 2005). The results of the study may be considered to have a potential bias or a conflict of interest as it is published in part by the author who

developed the NGASR. An explanation of the NGASR tool and what it measures is clearly described. The literature that was cited was current, appropriate, and a mix of research studies and expert discussions of suicide risk assessment. Conclusions were made by this article that two expert panel consensuses determined sufficient face validity and content validity for the NGASR when used to assess mental health client suicide risk. This study also mentions that mental health inpatient hospital staff have provided feedback indicating they are satisfied with the use of the NGASR and feel it offers a comprehensive approach to assessing mental health client suicide risk (Cutcliffe & Barker, 2004). Furthermore, this study states that a central purpose of the NGASR is to assist with the development of clinical judgment within nurses working with suicidal mental health clients. This study stated the expert panels consisted of senior clinical nurses, senior nursing academics, and senior psychiatrists, although the number of experts and specific credentials were not detailed. Even so, results of the study are applicable to the population of inpatient mental health nurses looking to improve their clinical judgment related to assessing mental health client suicide risk. This article also describes how the NGASR supports mental health client preferences by avoiding coercion during assessment. This article is important to the development of the NGASR as a suicide risk assessment but acknowledges the need for large scale quantitative testing.

The next research study that supports this project is by van Veen, van Weeghel, Koekkoek, and Braam (2015). This mixed method study was clear in its purpose to psychometrically test and assess the feasibility of using the Dutch version of the NGASR to assess mental health client suicide risk (van Veen et al., 2015). The researchers of this study conducted a literature review and discussed other studies supporting the reliability and validity of the NGASR. The researchers of this study felt previous studies did not use an appropriate

sample size and sought to test the NGASR on a larger scale. The sample size of the study was 252, which is the largest study currently published analyzing the use of the NGASR to measure suicide risk assessment. This large sample size is a strength of the study and works to ensure findings did not occur by chance. The major variables of this study were determined to be the reliability, validity, interpretability, and feasibility of the NGASR. Reliability of the NGASR was measured alongside twenty simultaneous ratings of another suicide risk assessment tool known as the Beck Suicide Intent Scale (SIS). Intraclass correlation scores were all at or above 0.80, which is indicative of sufficient interrater reliability. For this study the NGASR was determined to have low internal consistency due to a Cronbach's alpha coefficient of 0.45. Principal component analysis revealed eigenvalues that were >1 for 5 items, indicating high face validity. Predictive validity was calculated using multinomial regression alongside the SIS. Results were determined to be clinically relevant but not significant for all items, which may indicate poor to fair predictive validity. Interpretability was studied through calculations of sensitivity (high level) and specificity (very low). Feasibility was addressed in the discussion section of the article, where the authors felt the NGASR was not ideal for the Dutch psychiatric emergency service setting. Nevertheless, recommendations were made for further testing. The instrumentation utilized for this study appeared reliable. One hundred forty three patients were excluded from this study due to time limitations, safety issues, not being able to understand the Dutch language, or other communication difficulties. The study concludes by discussing the NGASR's ease of use and suggest that it may be used to assist nurses and other professionals with the development of clinical judgment in the assessment of suicide risk (van Veen et al., 2015).

Another research study that supports this DNP project is by Façanha et al. (2016). A central purpose of this mixed method study is to translate, adapt, and perform psychometric testing on the NGASR for the Portuguese population (Façanha et al., 2016, p. 471). The sample size of the total study was 109, which was a study strength. The sample was stated to be comprised of volunteers who were selected through convenience. The major variables examined in this study were content, criterion, and construct validity of the NGASR. Content validity was determined to be present by consensus of a panel of four expert nurses working in both mental health clinical and academic settings. Data was collected using a questionnaire that contained SIQ, the Beck Depression Inventory (BDI), the Depression Anxiety Stress Scale (DASS-21), and the NGASR. Data analysis consisted of a Cronbach's alpha for internal consistency and linear regression analysis between the NGASR and the other validated suicide assessment tools for criterion validity. Construct validity was determined through an exploratory principal components factor analysis with orthogonal varimax rotation, Bartlett's sphericity test, and Kaiser-Meyer-Olkin index. Results of the linear regression analysis showed a strong positive linear association ($R = 0.830$) between the NGASR and, BDI, DASS-21 and SIQ. Additional results for construct validity described the principal components factors analysis showing 6 factors, where the 15 predictive variables were able to explain 66.92% of the overall variance. Finally, internal consistency of the NGASR was measured with the Cronbach's alpha, which was moderate and found to equal 0.49 (Façanha et al., 2016). The results of the study may be biased as it is published in part by the author who developed the NGASR. The instrumentation incorporated in this study appeared reliable. This study demonstrates NGASR validity and is applicable to the population of mental health nurses looking to improve their clinical judgment in assessing inpatient mental health client suicide risk.

An additional research study that supports this DNP project is by Kozel et al. (2016). The intent of this cross-sectional study was to translate, adapt, and validate the inter-rater reliability of the German NGASR. An exhaustive review of the literature was conducted for this study related to the use of the NGASR as a suicide risk assessment tool. The sample was comprised of three physicians, nine nurses, and one occupational therapist in the setting of a gerontopsychiatric ward. After members of the sample completed the NGASR on twelve case studies, inter-rater reliability was measured through the use of Cohen's kappa, intraclass correlation, and AC1 statistics. Results showed the median kappa was 0.71 (0.58-0.81) and intraclass correlation scores of 0.90 (absolute agreement, 95% CI: (0.81-0.96) and 0.91(consistency, 95% CI: 0.84-0.97). AC1 statistics found 9 items had very high rater agreement and 7 items had a high rater agreement (Kozel et al., 2016). The results of the study may be biased as it is published in part by the author who developed the NGASR. The instrumentation incorporated in this study appear to be reliable. This study is applicable to the population of inpatient mental health hospital unit nurses looking to improve their clinical judgment in assessing mental health client suicide risk. This study concludes the NGASR is feasible for a wide range of clinical settings and that users reported high satisfaction when using the tool (Kozel et al., 2016).

The Registered Nurses' Association of Ontario (RNAO) (2009) describes a clinical practice guideline that further supports this DNP project. This clinical practice guideline details its purpose as promoting best practices for nurses to use when working with suicidal adults to reduce suicide rates. The authors of this guideline were comprised of nurses and other healthcare professionals selected by the RNAO. Many members of the panel consist of advanced practice mental health nurses in clinical and academic roles. To form the guideline recommendations, a

multidisciplinary panel of experts was formed and a review of the literature was conducted relating to care of the adult suicidal client. Feedback on the recommendations were provided by external stakeholders that included clients and family members. A consensus from the experts regarding information from the literature and stakeholder feedback informed the final recommendations of the guideline. For this guideline the NGASR was identified to be helpful as a tool to assist nurses with the assessment of mental health client suicide risk (RNAO, 2009).

The Emergency Nurses Association (ENA) (2012) describes another clinical practice guideline that supports this DNP project. This clinical practice guideline clearly states the aim to determine risk assessment tools and predictors that are effective in screening for self-harm in the emergency care setting. The authors of the guideline were members of the Emergency Nursing Resources Development Committee and all show advanced degrees and certifications in emergency nursing. The authors of this study report conducting a comprehensive literature review on suicide risk assessment tools. The literature results were reviewed and analyzed using the ENA Guideline for the Development of Clinical Practice Guidelines. The results were leveled using the Melnyk and Fineout-Overholt grading system, where the NGASR was determined to have Level B – Moderate grade as a suicide risk assessment tool that is feasible, valid and reliable for use in the emergency care setting for the adult client population.

A final research study that was appraised for this project is by Gramaglia et al. (2016). The purpose of this case-control study was to compare clinical variables among clients admitted to an inpatient mental health hospital unit. The authors of the study have credibility through their involvement with universities. No conflicts of interest were declared. The researchers of this study sought to improve the assessment and management of mental health clients who may attempt suicide through studying the variables of age, gender, psychiatric comorbidity, physical

comorbidity, medication therapy type, previous suicide attempts, Montgomery-Åsberg Depression Rating Scale (MADRS) scores, and NGASR scores. The sample consisted of 46 clients admitted over the course of a year (November 2014 – November 2015) to a mental health inpatient unit in Italy. Clients with a diagnosis of mental retardation and/or dementia were excluded due to inability to give consent. Measurements of clinical variables were obtained using clinical interviews, the MADRS, and the NGASR. Using chi-squared test, the t-test, and multivariate logistic regression, findings of this study show that previous suicide attempts are the most significant factor for future attempts. Recent suicide attempts were not related to the severity of depressive symptoms measured with the MADRS and NGASR scores significantly decreased for clients between admission and discharge from the hospital. The NGASR's use in a real-life inpatient mental health hospital unit demonstrates that utilization of the NGASR is feasible for this setting.

Level and Quality of Evidence

It is important to critically appraise and determine the strength of knowledge supporting clinical practice. The LEGEND critical appraisal resources offer a simple way to level and rank the quality of research studies to determine best evidence. The LEGEND critical appraisal resources are different from other appraisal tools by not requiring the user to read a manual or undergo training. Information on grading a body of evidence and judging the strength of a recommendation is well organized and straightforward, which allows the user to quickly gain meaningful information about the evidence. The LEGEND critical appraisal resources were developed by Cincinnati Children's Hospital Medical Center (CCHMC) and presents the levels of articles as overlapping in a table format, matching article designs against the domains of clinical questions (CCHMC, 2017). This DNP project utilized an intervention question and

accordingly the intervention appraisal tool was used. The LEGEND tool also includes an algorithm that assists users with determining the category of the article being ranked. A decision making algorithm assists in determining the choice of the correct critical appraisal form specific to the article design of the clinical/PICOT question. A table of evidence levels is used for assigning the level and quality of the individual articles based on clinical question domain and is found in Appendix D. Out of the seven articles examined one was an expert opinion (level 5), two were mixed method (level 2), one was cross-sectional (level 4), one was case-control (level 4), and two were guidelines (level 5). Appendix E offers an outline of the types of articles reviewed and corresponding levels of evidence assigned.

Despite the level assigned based on research article design, there remains variable quality of the actual research. Once the article level has been determined by the provided LEGEND algorithm, users are able to complete the corresponding evidence appraisal form that will assist with deriving the quality of the article (CCHMC, 2017).

Using the LEGEND evidence algorithm, the research study by Cutcliffe and Barker (2004) was determined to be an expert opinion and the corresponding form was used to complete the critical appraisal (CCHMC, 2017). An example of the expert opinion appraisal form can be found in Appendix F. Cutcliffe and Barker (2004) introduced and discussed the development/need for the NGASR. This authors tested the NGASR's validity and examines its use in the clinical setting. The only potential for bias or conflict of interest may come from the authors discussing and analyzing a tool they developed. Alternate points of view are included when providing an overview of the development/need for the NGASR. Conclusions made by the article are clearly articulated and applicable to the population of interest. This article takes into account nurses' views when discussing clinical application of the NGASR. Finally, this article

would be appropriate for a development of care recommendation. After consideration of these criteria this article was given an evidence grade of “A.”

Using the LEGEND evidence algorithm, the research study by Façanha et al. (2016) was determined to be a mixed method study and the corresponding form was used to complete the critical appraisal (CCHMC, 2017). An example of the mixed method appraisal form can be found in Appendix G. The purpose of this article was to validate the use of the NGASR for health care providers of the Portuguese population. The mixed methods study design was congruent with the authors’ purpose. This article utilized both expert opinion and psychometric study designs. Although expert opinion was used to determine face validity of the NGASR, it did not meet the criteria as being high quality. On the other hand, the psychometric study design was considered to be well-developed and high quality. The psychometric study design and the expert opinion were used to inform each other regarding the validation of the NGASR. The results of the article were significant in that they were able to suggest good face, content, and criterion validity as well as moderate internal consistency. This article takes into account nurses’ views when discussing clinical application of the NGASR. This article would be fit to be included in a development of care recommendation. After consideration of these criteria this article was given an evidence grade of “A.”

Using the LEGEND evidence algorithm, the research study by Kozel et al. (2016) was determined to be a cross-sectional study and the corresponding form was used to complete the critical appraisal (CCHMC, 2017). An example of the cross-sectional appraisal form can be found in Appendix H. The purpose of this article was to determine the interrater reliability of the NGASR for health care providers of the German population. The article is congruent with the authors’ aims and study methods were appropriate for measuring interrater reliability. The

instruments used to measure the outcome were Cohen's kappa coefficient and Gwet's AC1, both of which are considered to valid and reliable. This article also effective in describing appropriate variables and outcomes. The article mentions that all participants were accounted for at the end with no attrition. The only potential conflict of interest noted was that a founding author of the NGASR was included as an author of this article. The statistical analysis methods were appropriate but mention of a sufficient sample size was not addressed. The results of the article were clinically and statistically significant by demonstrating good interrater reliability. There were no reported adverse events and results of this article are applicable to the NGASR's use clinically by nurses. This article takes into account nurses' views when discussing clinical application of the NGASR and would be fit for a development of care recommendation. After consideration of these criteria this article was given an evidence grade of "A."

Using the LEGEND evidence algorithm, the research study by van Veen et al. (2015) was determined to be a mixed method study and the corresponding form was used to complete the critical appraisal (CCHMC, 2017). An example of the mixed method appraisal form can be found in Appendix G. The purpose of this article is to evaluate the psychometric properties of the NGASR for health care providers of the Dutch population. The mixed methods study design was congruent with the authors' article purpose. This article utilized both expert opinion and descriptive study designs. Although expert opinion was used to determine face validity, it did not meet the criteria as being high quality. On the other hand, the descriptive study design was considered to be well-developed and high quality. The descriptive study design and the expert opinion were used to inform each other regarding the validation of the NGASR. The results of the article were significant in that they were able to show good face and content validity as well as good interrater reliability. Construct validity was determined to be adequate. Internal

consistency and predictive values were low. The results are able to be applied to the NGASR's use clinically by nurses, although there is no discussion of the views/preferences of nurses. This article would be fit to be included in a development of care recommendation. After consideration of these criteria this article was given an evidence grade of "A."

Using the LEGEND evidence algorithm, the article by the RNAO (2009) was determined to be a guideline and the corresponding form was used to complete the critical appraisal (CCHMC, 2017). An example of the guideline appraisal form can be found in Appendix I. The article was helpful with answering the clinical question of this DNP project as it discussed the feasibility of use of the NGASR as a tool to assess mental health client suicide risk. The overall objective of the recommendation was to promote best practices for nurses to use when working with suicidal adults to reduce suicide rates. The guideline provides specific questions relating to the recommendations and mentions the need for organizations to incorporate policies relating to the documentation of suicide risk. The recommendation speaks specifically to the reducing the rate of suicide in the population of suicidal adults. The guideline development group included individuals from relevant professional group of nurses in addition to consulting the views and preferences of clients and families. The target user of the guideline was stated to be nurses. The guideline discusses having specific criteria for systematically searching the literature. This criteria required the literature to be published in 2002 or later, be in English, be evidence-based, and address a series of questions on management of suicide risk for adults. The guideline discussed a strength of the evidence is the applicability to a wide variety of clinical settings. A limitation of the guideline is that it does not take into account the most up-to-date research regarding the NGASR. The methods for formulating the recommendations were clearly discussed and involved a literature search, consensus among a multidisciplinary panel of experts,

and input from stakeholders like clients and their families. The primary risk addressed by the guideline state is that the use of the recommendations should not be substituted for nursing clinical judgment. The guideline offers an explicit link between the recommendations and the supporting evidence through citation of the sources consulted. The guideline was externally reviewed by nurses and academics prior to its publication. A section in the guideline was included addressing a procedure to update the guideline. The recommendations offered by the guideline were specific and unambiguous and discussed a variety of topics and assessment tools related to suicide risk. A summary of key recommendations were easily identifiable and were highlighted at the beginning of the guideline. A section of the guideline offers a discussion of implementation strategies and provides advice on how to utilize facilitators and overcome barriers while putting the recommendations into practice. In the implementation strategies potential staffing resource implications of applying the recommendations are addressed. The guidelines discuss a monitoring system to help organizations identify opportunities for learning after a critical incident happens (such as a client's suicide). The guideline declared no conflicts of interest. Views of the guideline supported the views of the RNAO. This guideline should be included in a development of care recommendation. After consideration of these criteria this article was given an evidence grade of "A."

Using the LEGEND evidence algorithm, the article by the ENA (2012) was determined to be a guideline and the corresponding form was used to complete the critical appraisal (CCHMC, 2017). An example of the guideline appraisal form can be found in Appendix I. The article addressed the PICOT question of this DNP project by supporting the NGASR's use for assessing mental health client suicide risk. The overall objective of the recommendation was clearly described as determining risk assessment tools and predictors that are effective in

screening for self-harm for the target users of nurses in the emergency care setting. The recommendation was specific in describing the need for use of suicide risk assessment tool for the population of nurses working in the emergency care practice settings. The guideline development group included members from all relevant professional groups but did not include the views and preferences of the target population. The recommendation discusses a systematic approach to searching databases and selecting evidence pertaining to suicide risk assessment tools. The strengths and limitations of the body of evidence were described in terms of evidence that was graded using Melnyk and Fineout-Overholt grading system. The methods for formulating the recommendations were clearly described as coming from the ENA Guideline for the Development of Clinical Practice Guidelines. A description of the health benefits, side effects, and risks considered in formulating the recommendations was not provided. A link between the recommendations and the supporting evidence was provided by direct links to the literature. The recommendation states that it was externally reviewed by the Institute for Emergency Nursing Research prior to publication. No procedure for updating the guideline was provided. The recommendation supporting the NGASR's use for assessing adult suicide risk is clearly stated. Multiple options in terms of suicide risk assessment tools were clearly provided and recommendations are easily identifiable. The guideline described facilitators for incorporation of a suicide risk assessment tool as being recommendation from organizations like the Joint Commission, where barriers may be length of the assessment tool. The guideline did not provide advice on how to incorporate the suicide risk assessment tool or where to find resources for application. The guideline also did not present monitoring and/or auditing criteria. The guideline would be influenced by funding from the ENA, but no other competing interests

were discussed. This guideline should be included in a development of care recommendation. After consideration of these criteria this article was given an evidence grade of “A.”

Using the LEGEND evidence algorithm, the seventh research article by Gramaglia et al. (2016) was determined to be a case-control study and the corresponding form was used to complete the critical appraisal (CCHMC, 2017). An example of the case-control appraisal form can be found in Appendix J. The purpose of this article is improve the assessment and management of client at risk for committing suicide by comparing clinical variables among clients admitted to an inpatient mental health hospital unit. Inclusion and exclusion criteria were clearly stated and the study is congruent with the authors’ purpose for answering the clinical question. The study methods were clearly described and details surrounding the separation of mental health clients who recently completed a suicide attempt and mental health clients who had not recently completed a suicide attempt were provided. The instruments used to measure the outcomes were the chi-squared test, the t-test, multivariate logistic regression, the MADRS, and the NGASR. The variables (including the potential confounders of a number of unassessed clinical and/or socio-demographic factors) were clearly discussed. The findings regarding the outcomes related to variables of significance (previous suicide attempts), MADRS scores, and NGASR scores were clearly described. The authors were able to account for all participants at the end of the study and declared no conflict of interest. The statistical methods measuring the chi-squared test, the t-test, and multivariate logistic regression were clearly described; variables of interest and significance levels are easily viewed in table format. Statistical significance was discussed for the variable of previous suicide attempts accounting for future suicide attempts. The authors did not discuss a power analysis being performed to reach a sufficiently large sample size. The results of the study were statistically and clinically significant, showing that

past suicide attempts are an indicator for the potential for future suicide attempts. Results also showed that levels of depression related to the MADRS was not related to suicide risk, and that NGASR scores showed a significant decrease for clients between their admission and discharge from the hospital. No adverse events were discussed by the authors in the article. The results of this study are applicable to the population of interest for this DNP project, showing that the NGASR is able to be used in the inpatient setting and demonstrates a decrease in scores as the client progresses to discharge. The mental health clients' and family's values and preferences are not addressed in this article, but the results of the study should be included in a development of care recommendation. After consideration of these criteria this study was given an evidence grade of "A." Appendix E offers an outline of studies reviewed and the corresponding quality of evidence assigned.

Strength of Recommendation

The CCHMC (2017) LEGEND appraisal algorithm describes four levels of grading for the overall body of evidence. An example of the grading the body of evidence form can be found in Appendix K. These grading levels consist of high, moderate, low, and grade not assignable. In general, a grade of "high" can be given to a body of high level studies with high quality of evidence. Studies overall must be designed well, have sufficient validity, and share consistent, important clinical information. A grade of "moderate" can generally be given to a body of studies with good designs, fair validity, and occasional uncertainty. A grade of "low" can generally be given to a body of studies that are ranked as level 5, are expert opinions, have inconsistent results, and/or has poor study design. The final category of "grade not assignable" is given to a body of studies have not been completed, have a flawed study design, or are based

on local opinion (CCHMC, 2017). The body of evidence supporting the use of the NGASR was graded as “moderate” due to having multiple studies with good designs and measures of validity.

The CCHMC (2017) LEGEND appraisal algorithm discusses seven criteria to consider before ranking the practice change into the categories of strongly recommended, recommended, and insufficient evidence for recommendation. An example of the judging the strength of a recommendation form can be found in Appendix L. The seven criteria include the body of evidence grade, safety/harm of intervention, benefit to population, burden to population, cost-effectiveness, directness, and impact on morbidity, mortality, and/or quality of life (CCHM, 2017). After consideration of the criteria, it is recommended that the NGASR be incorporated on a mental health hospital unit to assist nurses with assessing client suicide risk. The body of evidence supporting this recommendation was determined to be moderate. This practice change may yield significant benefits to nurses with minimal adverse effects. Use of the NGASR by nurses would be cost-effective without adding a high degree of adherence burden. There is a medium to high potential impact on morbidity, mortality, and/or quality of life. Table 4 offers an outline of the strength of recommendation.

Table 4

Strength of Recommendation Table

Recommendation (LEGEND)	Strength of Evidence for Recommendation (LEGEND)	References in Support of Recommendation
It is recommended that the NGASR be incorporated on a mental health inpatient hospital unit to assist nurses with assessing client suicide risk and deciding when to place clients with safety sitters.	Moderate – This body of evidence has multiple studies that are overall consistent and have some strong study designs. The complex nature of suicide requires continued psychometric verification of the NGASR.	Cutcliffe & Barker, 2004; ENA, 2012; Façanha et al., 2016; Gramaglia et al., 2016; Kozel et al., 2016; RNAO, 2009; van Veen et al., 2015

Summary

This section provided an overview of the EBPI model and its application as the evidence-based framework to guide this DNP project. The exhaustive literature review yielded seven research studies that supported the nursing practice change of utilizing the NGASR on an inpatient mental health hospital unit to assess suicide risk in mental health clients. The LEGEND critical appraisal tool was used to evaluate the seven research articles and determined there was a moderate strength of evidence to recommend incorporating the NGASR into nursing clinical practice.

Chapter III. Project Implementation

This section provides an overview of the DNP project implementation process. The project setting, population of interest, resources, ethical considerations, and legal considerations are addressed. This section additionally speaks to DNP project stakeholders, DNP project barriers, DNP project facilitators, and DNP project outcome measures.

Setting and Population of Interest

The setting of this DNP project was a 30 bed American Midwestern suburban public mental health inpatient hospital unit. Adult mental health clients are admitted to this inpatient mental health hospital unit by a hospital-affiliated psychiatrist who feels the mental health clients pose a significant risk of harming themselves or other people. The populations of interest for this DNP project were mental health clients and the 60 nurses on this mental health inpatient hospital unit who perform suicide risk assessments on mental health clients.

Resource Identification

The resources identified as necessary for this DNP project implementation includes permission to use the NGASR (see Appendix A), permission to work with the nursing staff, paper and copying supplies, laptop computer, Microsoft® Office PowerPoint®, and this DNP project investigator's time. Permission to use the NGASR was free. Permission to work with the nursing staff was free. Paper and copying supplies were paid by the organization. The laptop computer, Microsoft® Office PowerPoint®, and this project investigator's time were covered by this project investigator. These resources were considered for the DNP project economic analysis, which can be found in Appendix R.

Ethical and Legal Considerations

In compliance with ethical and legal standards, this DNP project received permission and approval from the NGASR creator, hospital administration, Wright State University Institutional Review Board (IRB), and hospital network IRB. Permission to use the NGASR from the tool creator can be found in Appendix A. Hospital administration's permission to complete the DNP project can be found in Appendix M. Wright State University IRB and hospital IRB's determination that this DNP project does not meet the criteria for human subject research can be found in Appendices N and O respectively.

The voluntary nursing survey completed at the end of the project (see Appendix B) was able to maintain nursing participant confidentiality by de-identifying the nurses' names. The nursing surveys were completed at the end of the DNP project intervention and were placed together in an envelope by the participating nurses. After the nursing survey collection and during the data analysis process the nursing surveys were stored in a locked container in the project investigator's home office. The project investigator had sole access to the locked container to protect DNP project data.

Stakeholders

Stakeholders important to the process of change can include the inpatient mental health hospital unit administration, nurses, physicians, and mental health clients. For this DNP project, the inpatient mental health hospital unit administrators were stakeholders because they allowed the intervention to take place on their hospital unit and created an atmosphere that supports evidence-based nursing practice. The inpatient mental health hospital unit administrators also facilitated communication and NGASR training with the nursing staff. The inpatient mental

health hospital unit administrators additionally wanted to avoid the mental health client outcome of suicide, which can affect hospital ratings and is considered a sentinel event by accreditation bodies such as the Joint Commission (2016). The nurses were stakeholders because they were the individuals completing the suicide assessments on the mental health clients. The physicians on the inpatient mental health hospital unit were considered stakeholders as they also hold responsibility for the deciding aspects of medical care and the discharge of the mental health clients. It is important to consider that nurses and physicians often work together to decide when mental health clients should be placed with a safety sitter. The mental health clients who are being assessed were important stakeholders to this project as the measurement of suicide risk had implications for their health care outcomes. Finally, the mental health community is considered a stakeholder as this DNP project can further inform other mental health professionals who may want to implement the NGASR into their care setting.

Barriers to Implementation

The status quo is often considered to possess a level of comfort and familiarity, such that any deviation from “normal” has the possibility to be countered by discomfort and some level of resistance. The no-suicide contract was popularized in the 1970s and is currently widely used in inpatient mental health hospital units (Bryan et al., 2017; Puskar & Urda, 2011). It was expected that nurses would experience a level of resistance to changing their practice and incorporating the NGASR. To mitigate the resistance to change, education was provided to the nursing staff on how using an empirically-tested evidence-based suicide risk assessment tool could potentially reduce the risk of litigation and improve the nurses’ clinical judgment related to suicide risk. Time was taken during the NGASR educational period to provide clarification to nurses who had questions or misconceptions about using the NGASR in clinical practice. An additional barrier

was nursing workload. Hospital nurses are often required to complete extensive charting in addition to dealing with frequent short-staffing (often due to call offs or lack of available staff). The use of the no-suicide contract is much quicker than taking the time required to assess a mental health client using the NGASR. To mitigate concerns about nursing workload, education on the NGASR was provided via a Microsoft® Office PowerPoint® presentation so that nurses could receive the education at their convenience and not be distracted by their workload. Nurses were additionally provided with assistance integrating the use of the NGASR into existing assessment routines. An overview of stakeholders, potential barriers, and barrier mitigators can be found in Appendix P.

Facilitators to Implementation

Improvement of client outcomes is the central objective and component of evidence-based practice. A facilitator for the mental health nurses was thought to be a desire to improve their practice and the quality of care they provide to mental health clients. Both nurses and physicians on the inpatient mental health hospital unit have stated that no-suicide contracts were being over utilized and espoused a desire to incorporate a formal suicide risk assessment tool. Another facilitator was the potential for improved mental health client satisfaction due to mental health clients not feeling coerced by the use of the NGASR. Inpatient mental health hospital unit administrators were also facilitators and encouraged NGASR incorporation in an effort to improve mental health client outcomes, improve mental health client satisfaction, reduce liability, save money from unnecessary use of safety sitters, and foster the education/abilities of the nursing staff. An overview of stakeholders, potential facilitators, and facilitator aids can be found in Appendix Q.

Process for Implementation

To implement this DNP project a meeting was scheduled with the nurse manager and nurse educator of an inpatient mental health hospital unit. During the meeting the DNP project investigator explained the intention of the DNP project and the importance of incorporating evidence-based practice when performing suicide risk assessments on mental health clients. The nurse manager and nurse educator were provided with education on how no-suicide contracts were not based in evidence and have potential ethical implications for mental health clients (Bryan et al., 2017, Farrow, 2003; Lewis, 2007; McMyler & Prymachuk, 2008; Puskar & Urda, 2011). An overview was then provided of the NGASR as a feasible, evidence-based suicide risk assessment tool that has demonstrated validity and reliability with empirical testing. The DNP project investigator engaged the nurse manager and nurse educator in a discussion on the NGASR's potential benefits of improving mental health client quality of care and improving nurses' clinical judgment related to suicide risk assessment. After receiving verbal permission from the inpatient mental health hospital unit nursing administration to implement the NGASR this DNP project was submitted to both Wright State University and the agency's IRB. Both IRBs determined this DNP project did not qualify as human subjects research (see Appendices N and O).

The inpatient mental health hospital unit nursing administration stated they preferred to utilize paper NGASR forms during the DNP project and would consider incorporation of the NGASR into the hospital network electronic healthcare record based on the DNP project results. Paper NGASR forms were developed and can be found in Appendix T. The inpatient mental health hospital unit nursing administration also requested that nursing staff education on the NGASR and DNP project occur via a Microsoft® Office PowerPoint® presentation module

uploaded to HealthStream® so that nursing staff completion could be tracked. This educational presentation provided an overview of the NGASR, the evidence supporting using the NGASR over the no-suicide contract, and case studies for practice that were developed based on actual mental health client scenarios. The 60 nursing staff were instructed by the inpatient mental health hospital unit nurse educator to view the educational presentation during the week prior to DNP project practice change. The nursing staff were provided with the project investigator's contact information to address any potential questions. A copy of the DNP project nursing staff educational presentation can be found in Appendix U.

On the practice change go-live date NGASR paper forms and collection trays were placed in the two nursing stations on the inpatient mental health hospital unit. The nursing staff were encouraged by the inpatient mental health hospital unit nursing administration and DNP project investigator to stop incorporating the no-suicide contract and complete the NGASR for each mental health client once a shift. The DNP project investigator was on site at the inpatient mental health hospital unit to meet with nursing staff and address any problems or questions with NGASR tool completion. The DNP project investigator visited the inpatient mental health hospital unit to address nursing staff questions frequently during the first two weeks of the practice change and every seven to fourteen days for the rest of the two months after the NGASR practice change.

Outcome Measures

The DNP project outcomes speak to the overall purpose of the DNP project, which is to determine how the use of the NGASR compared to the use of a no-suicide contract is able to have an impact on nursing practice and mental health client quality of care. The first outcome measured for this DNP project involves nursing perceptions regarding the process of change

from using the no-suicide contract to using the NGASR. Two months after providing education to staff nurses on use of the NGASR, de-identified written responses to the survey prompt “Please share your opinion on the process of changing to move away from using the no-suicide contract and incorporating the NGASR into your nursing practice” will be collected, compiled, and presented as a summary. The second outcome measured for this DNP project looked at nursing perceptions regarding how their practice has changed after using the NGASR. Two months after providing education to staff nurses on use of the NGASR, de-identified written responses to the survey prompt “Please share your opinion on how the NGASR was able to change your practice and the quality of care received by clients in the mental health inpatient hospital unit setting” will be collected, compiled, and presented as a summary. To provide context to the first two outcome measures, the nursing staff will additionally be asked to share how long in years they have been performing suicide risk assessments as a nurse.

Quantitative outcome data was also sought to assess for potential correlation with changes to nursing practice and mental health client quality of care. This data included the frequency (number of safety sitters initiated) and length (hours) of safety sitters used two months before and two months after providing education to the inpatient mental health hospital unit nurses on using the NGASR. To offer context on inpatient mental health hospital unit acuity, information on the total number of mental health clients admitted and average length of hospital stay was collected for the two months before and two months after the nursing NGASR practice change. Information on the frequency and length of safety sitters used as well as the number of mental health clients admitted and average length hospital stay was provided to the DNP project investigator by inpatient mental health hospital unit nursing administration. The final quantitative data collected for this DNP project was the cost of safety sitters assigned to mental

health clients on the inpatient mental health hospital unit for two months before and two months after the nursing NGASR practice change. Nurses' level of clinical judgment when assessing mental health client suicide risk directly influences safety sitter use, costing the hospital an average of \$15.93 an hour per sitter (B. Cox, personal communication, October 22, 2018). The length in hours of safety sitters used two months before and two months after the intervention was multiplied by the organizational rate of pay for safety sitters to calculate changes in organizational cost that result from the intervention. Appendix R displays an economic analysis of the costs and return on investment resulting from implementation of this project. Appendix S summarizes outcomes that were measured and measurement approaches used during the implementation of the NGASR on the inpatient mental health hospital unit.

Gantt Chart

A Gantt chart is a visual representation of a project that details the steps to project completion, the person or group responsible for completing each step, and the length of time until project completion (Duffy, 2016). A Gantt chart is an important tool that helps with project organization and time management (Duffy, 2016). A Gantt chart was developed for this DNP project to illustrate the steps of NGASR nurse practice change implementation over time using the EBPI model (Levin et al., 2010). Tasks within each step are identified and worked to guide the project investigator through the fifteen months to the DNP project completion. This Gantt chart can be found under Appendix V.

Summary

This section described the DNP project implementation process. The NGASR was incorporated into nursing suicide risk assessments on an American Midwestern suburban public

inpatient mental health hospital unit. Consideration was given to resources, ethics, stakeholders, barriers, and facilitators prior to DNP project initiation. After gaining DNP project approval from inpatient mental health hospital unit nursing administration, sixty nurses completed the computerized NGASR education module. Two months after the NGASR practice change nurses were given a survey asking their opinions on the process of change to using the NGASR and the resulting change in mental health clients' quality of care. The inpatient mental health hospital unit nursing administration provided additional outcome measure information on the use and cost of safety sitters two months before and two months after the NGASR practice change.

Chapter IV: Project Evaluation

This section provides an overview of this DNP project evaluation process. Attention will be given to the data collection process, evaluation of DNP project implementation, and evaluation of DNP project impact. This section ends with a discussion of the statistical procedures used for data analysis.

Data Collection Process and Procedures

During the final week of the two month NGASR practice change the nursing staff were encouraged to complete a voluntary de-identified survey asking years of experience completing suicide risk assessments, their opinions on the process of change to using the NGASR, and their opinions on the resulting change in quality of care given to their mental health clients (see Appendix B). A manila envelope and 30 surveys were placed in each of the two nursing stations on the inpatient mental health hospital unit for completion at the nurses' convenience. On the final day of the DNP project the DNP project investigator visited the inpatient mental health hospital unit to collect the surveys. The inpatient mental health hospital unit nursing administration tracked and recorded information on the frequency and length of safety sitters used as well as the number of mental health clients admitted, average length hospital stay, and occurrence of suicide for two months before and two months after the NGASR practice change. The inpatient mental health hospital unit nursing administration provided this data as well as information on the organizational rate of pay for safety sitters to the DNP project investigator. The nursing surveys and data supplied by the inpatient mental health hospital unit nursing administration were stored in a locked container in the DNP project investigator's home office. The DNP project investigator had sole access to the locked container.

Evaluation of Implementation

In order to evaluate the DNP project implementation it was important to capture the nursing staff's feelings on the process of changing their practice. Two months after the DNP project intervention the nursing staff were asked to answer the survey prompt "Please share your opinion on the process of changing to move away from using the no-suicide contract and incorporating the NGASR into your nursing practice." This qualitative measure was explicated by comparing answers to search for theme, similarities, and differences.

Evaluation of Impact

In order to evaluate the DNP project impact it was important to capture the nursing staff's feelings on how the NGASR was able to change their practice and mental health clients' quality of care. Two months after the DNP project intervention the nursing staff were asked to answer the survey prompt "Please share your opinion on how the NGASR was able to change your practice and the quality of care received by clients in the mental health inpatient hospital unit setting." This qualitative measure was explicated by comparing answers to search for themes, similarities, and differences. The DNP project impact was additionally quantitatively evaluated by determining the frequency of safety sitters used, the length in hours of safety sitters used, the cost of safety sitters used, and the frequency of mental health client suicide two months before and two months after the DNP project intervention.

Statistical Procedures for Data Analysis. The data for this DNP project were analyzed using descriptive statistics to describe and gain understanding of the nurses' experience and outcomes related to the practice change. Inferential statistics were not used as the objective of the DNP study was not to "provide predictions about population characteristics" (Munro, 2005,

p. 4). The nursing staff survey was able to provide a breakdown of average nursing experience with suicide risk assessments and rate of survey completion. Information on number and length of safety sitters used, cost of safety sitters, total number of mental health clients admitted, average length of mental health client hospital stay, and incidence of mental health client suicide during hospitalization were compared for two months before and two months after the practice change, where differences were expressed as a percentage. The agency IRB prevented the DNP project investigator from directly collecting information from mental health client charts, as the information requested could be obtained through sources other than the medical record. The inability to directly collect information from the medical record prevented more extensive data analysis.

Summary

This section described the data collection process for this DNP project. Information on the evaluation of DNP project implementation and impact was collected at the end of the DNP project through a voluntary de-identified nursing survey. Additional information on number and length of safety sitters used, cost of safety sitters, total number of mental health clients admitted, average length of mental health client hospital stay, and incidence of mental health client suicide while hospitalized was provided to the DNP project investigator at the end of the DNP project by the inpatient mental health hospital unit nursing administration. Finally, this section discussed the plan to use descriptive statistics to describe and gain understanding of the nurses' experience and outcomes related to the practice change.

Chapter V: Project Findings

This section provides an overview of this DNP project's findings. This overview will address findings related to DNP project implementation, findings related to DNP project impact, and quantitative DNP project outcomes. This section will additionally discuss DNP project clinical significance, factors facilitating or hindering outcomes, recommendations for the future, and plans for DNP project dissemination.

Findings Related to Implementation

Twenty-two out of sixty nurses (36.7%) completed the nursing survey at the end of the DNP project. Nurses who completed the survey reported an average experience of 8.67 years (standard deviation ± 11.36) completing suicide risk assessments on mental health clients. Nursing staff's answers to the survey prompt "Please share your opinion on the process of changing to move away from using the no-suicide contract and incorporating the NGASR into your nursing practice" were sorted into positive, neutral, and negative responses.

There were four nursing responses that indicated the process of changing from the no-suicide contract to the NGASR was positive. One nursing response felt the process of changing to use the NGASR was beneficial, stating it "offered more quantifiable criteria" that could not be manipulated like the no-suicide contract. Two other nursing responses felt the process of changing to use the NGASR was helpful with increasing understanding and attention to the mental health client's history and current situation. The last nurse responded that "a contract is not a valid tool, it offers false security that a patient will not hurt themselves." This nurse further stated the "NGASR is a good tool" and supported its use during admission assessment and during the shift when the nurse is assessing for suicidal ideation.

There were seven nursing responses that viewed the process of changing from the no-suicide contract to the NGASR as neutral. These nursing responses acknowledged the NGASR offered more in-depth information but stated mental health client assessment was “a longer process.” Two nursing responses indicated the process of change was “useful,” although it was felt the scoring and resulting interventions should be adjusted before further use on the inpatient mental health hospital unit. Another nurse felt using the NGASR worked “well on the [low acuity hall] but not very well on the [high acuity hall],” as it was “very difficult to get the patients to answer the questions.” One nurse stated they felt the NGASR indicated many more mental health clients should be placed with safety sitters and there was not enough staff available to meet the NGASR recommendations. Another nursing response was “I am not familiar with the NGASR.”

Finally, there were eleven nursing responses that viewed the process of changing from the no-suicide contract to the NGASR as negative. Five responses felt the NGASR categorized too many mental health clients as inappropriately needing to be with safety sitter or transferred to the high acuity hall. Two nursing responses stated they felt the NGASR was too “time-consuming” and “not practical.” One nursing statement mentioned they felt the no-suicide contract was “more accurate than the NGASR” with assessing suicide risk. Another nursing response detailed they felt as though the NGASR was “very repetitive” as they continued asking “some of the questions we cover on admission.” Another two nursing response stated “I didn’t care for the NGASR” with no further explanation. A summary of the positive, neutral, and negative themes related to DNP project implementation can be found in Table 5.

Table 5*DNP Project Implementation Summary Table*

	Positive Responses	Neutral Responses	Negative Responses
Nursing Response (%)	18.18%	31.82%	50%
Summary of Themes	- Changing to the NGASR “offered more quantifiable criteria” that could not be manipulated like no-suicide contract, which “is not a valid tool [and] offers false security.” Nurses felt increased understanding and attention to the mental health client’s history and current situation.	- Changing to the NGASR offered more in-depth information but assessment was “a longer process.” While “useful,” the scoring and interventions should be adjusted as many more mental health clients were recommended to be placed with a safety sitter.	- Changing to the NGASR made assessment too “time-consuming,” “repetitive” and “not practical” as many mental health clients were inappropriately recommended to be with a safety sitter. This made one nurse feel as though the no-suicide contract was “more accurate than the NGASR.”

Findings Related to Impact

Nursing staff’s answers to the survey prompt “Please share your opinion on how the NGASR was able to change your practice and the quality of care received by clients in the mental health inpatient hospital unit setting” were sorted into positive, neutral, and negative responses. There were thirteen nursing responses that indicated the NGASR was able to positively impact their practice and the quality of care received by mental health clients. Five nurses felt using the NGASR was able to increase their awareness and insight into their mental health client’s history. Four other nurses replied that the NGASR was helpful with paying attention to other characteristics of suicide risk instead of just asking if the mental health client was suicidal. Another nurse stated the NGASR was “very helpful” specifically with “critical thinking.” Other nursing responses felt the NGASR was “good for charting” and improved

assessment by offering the nurse “a better feel for the [mental health client’s] probability of a terminal event.” A further nursing statement was the NGASR was “a far more effective tool for assessment” than the no-suicide contract, which “certainly lacks effectiveness and is almost false reassurance.”

There were three neutral nursing responses to the NGASR changing their practice and the quality of care for mental health clients. One survey response was blank, one stated “I am not familiar with the NGASR,” and one stated the NGASR was “helpful as an assessment tool but not as a level of care placement tool.”

Finally, there were six negative nursing responses to the NGASR changing their practice and the quality of care for mental health clients. Two nursing responses stated the NGASR made assessment “more time-consuming” and was “more work for [nurses].” Another nurse said “No change in my practice,” if a mental health client truly wants to end their life “they have the control. Not us!” Two other nurses stated “It didn’t” change my practice and “I don’t feel much has changed.” The last nursing response stated “I don’t recall a single episode of us moving a patient to the [high acuity hall] or [placing them with a safety sitter].” A summary of the positive, neutral, and negative findings related to DNP project impact can be found in Table 6.

Table 6*DNP Project Impact Summary Table*

	Positive Responses	Neutral Responses	Negative Responses
Nursing Response (%)	59.09%	13.64%	27.27%
Summary of Themes	- The NGASR increased nurses' awareness and insight into mental health client history and other characteristics of suicide risk. The NGASR was "very helpful" with "critical thinking" and was "good for charting." The NGASR was "a far more effective tool for assessment" than the no-suicide contract, which "certainly lacks effectiveness and is almost false reassurance."	- The NGASR was "helpful as an assessment tool but not as a level of care placement tool."	The NGASR made assessment "more time-consuming" and was "more work for [nurses]." The NGASR did not change nursing practice and no mental health clients were moved to the high acuity hall or placed with a safety sitter after being assessed. If a mental health client truly wants to end their life "they have the control. Not us!"

Quantitative Outcome Measures

The quantitative outcomes measured for this DNP project included the number of safety sitters initiated, the length (in hours) of safety sitters used, cost (in dollars) of safety sitters used, the total number of mental health clients hospitalized, average length (in days) of mental health client hospital stay, and the total number of mental health clients completing suicide during their hospitalization for two months before and two months after the practice change. Table 7 displays the outcomes measured for this DNP project and the percentage change between the measurement periods.

Table 7*Outcome Measures*

Outcomes Measured	June 26, 2018 to August 21, 2018	August 22, 2018 to October 17, 2018	Percentage Change
Number of Safety Sitters Initiated	9	5	-44.44%
Length (in Hours) of Safety Sitters Used	891.23	207.13	-76.76%
Cost (in Dollars) of Safety Sitters	\$14,197.29	\$3,299.58	-76.76%
Total Number of Mental Health Clients Hospitalized	1,310	1,280	-2.29%
Average length (in Days) of Mental Health Client Hospital Stay	9.97	8.41	-15.65%
Total Number of Mental Health Clients Completing Suicide During Hospitalization	0	0	0%

Clinical Significance

According to the exhaustive literature review for this DNP project, this is apparently the first written account describing the implementation and evaluation of the NGASR for a North American inpatient mental health hospital unit. The results of this DNP project indicated nurses felt the process of changing to use the NGASR was overall neutral (31.82%) to negative (50%). Many nurses were concerned with NGASR being “a longer process” (“NGASR Survey,” 2018), “time-consuming” (“NGASR Survey,” 2018), and “repetitive” (“NGASR Survey,” 2018) compared to the no-suicide contract. This finding was somewhat expected as the nursing staff

were completing the NGASR on paper forms (as opposed to entering the assessment in the electronic healthcare record). Many nurses also felt the NGASR rated a large number of mental health clients as being a “very high” level of suicide risk, which encourages the nurse to consider placing the mental health client with a safety sitter. Despite NGASR recommendations, many nurses felt a large number of the mental health clients did not need to be placed with a safety sitter. This could be related to nursing knowledge, experience, attitudes and/or staffing resources. Nurses who did respond positively (18.18%) to the process of change liked that the NGASR incorporated more objective information compared to the no-suicide contract. These nurses also felt the no-suicide contract could be manipulated by the mental health client and “offers false security.”

Compared to the process of change, a majority of nurses provided neutral (13.64%) to positive (59.09%) responses when asked how the NGASR changed their practice and mental health client care. Many nurses felt the NGASR increased awareness and insight into the mental health clients’ problems and history. Other nurses described the NGASR as being helpful with assessment and critical thinking related to mental health client care. Nurses who responded negatively (27.27%) felt the NGASR did not change their practice and mental health client quality of care (including placing mental health clients with safety sitters).

During the two months of NGASR incorporation on the inpatient mental health hospital unit the use of safety sitters decreased by 44.44% compared to the prior two months using the no-suicide contract. The inpatient mental health hospital unit also saw a 76.76% (\$10,897.71) decrease in money spent on safety sitters during the two months of NGASR incorporation compared to the prior two months using the no-suicide contract. The two months of NGASR use saw a 2.29% decrease in the number of mental health clients and a 15.65% decrease in average

length of stay compared to the two months of using the no-suicide contract. The decrease in safety sitter use and cost may indicate correlational changes resulting from nurses using the NGASR or could result from lower mental health client acuity. It is also important to note that no mental health clients completed suicide during their hospitalization for the two months before and after the NGASR practice change.

Factors Facilitating or Limiting Outcomes

This DNP project experienced both facilitating and limiting factors related to outcomes. A significant facilitating factor to outcomes was the inpatient mental health hospital unit nursing administration, who were supportive of incorporating evidence-based nursing practice. On the other hand, the inpatient mental health hospital unit nursing administration's role in assisting with DNP project implementation may have caused the nursing staff to feel coerced into participation. An additional limiting factor to outcomes was the project investigator not being able to provide initial NGASR education face-to-face with nursing staff. This was due to inpatient mental health hospital unit nursing administration wanting to track staff completion of an online HealthStream® education module, which consisted of watching a Microsoft® Office PowerPoint® presentation (See Appendix U). The DNP project investigator received no e-mailed questions, so the nursing staff may have felt more comfortable asking questions in person. Another limiting factor to outcomes was the DNP project investigator not being able to hold a nursing staff meeting to discuss the DNP project and distribute nursing surveys, which may have contributed to low nursing survey completion (36.7%). This was due to the end of the DNP project not coinciding with the schedule of inpatient mental health hospital unit staff meetings. An additional limiting factor to outcomes was the project investigator not being able to build the NGASR into the electronic healthcare record, which was due to the inpatient mental

health hospital unit nursing administration wanting to initially test the NGASR's use on paper. In the findings related to both implementation and impact nurses stated completing the paper NGASR was more "time-consuming" than using the no-suicide contract. Incorporating the NGASR into the electronic healthcare record may lessen the time required to complete the assessment, as static factors (which remain unchanged during the mental health client's hospital stay) could be imported into each nurse's shift charting. One final limiting factor would be the NGASR's intervention recommendation to consider a safety sitter for mental health clients who were scored as a very high risk of suicide. While the decision to place a mental health client at "very high" risk of suicide with a safety sitter is worth consideration, nurses felt as though there were not enough staffing resources to place a safety sitter with the large number of mental health clients who scored as a "very high" suicide risk.

Recommendations for Future

It is recommended the NGASR undergo further incorporation and study for use on inpatient mental health hospital units. Future evidence based practice (EBP) projects should study how incorporating the NGASR into the electronic healthcare record is able impact nurses' perception of workload and assessment of mental health clients. It is additionally recommended that future EBP projects provide initial NGASR education and data collection in person rather than through a computer to ensure nursing staff comprehension and encourage completion of surveys. The nursing staff also reported that many mental health clients were being scored as a "very high" level of suicide risk and that there were not enough staffing resources to place the mental health clients with a safety sitter. Further consideration should be given to developing alternative NGASR interventions besides safety sitters for mental health clients who score as a "very high" suicide risk. Finally, it is recommended that future studies examine the American

Midwestern population to assess for any unique characteristics that would place this population at a higher risk for suicide.

Dissemination

The findings from this DNP project will be disseminated in a report to the administrative personnel and staff at the hospital where the nursing practice change took place. There are also plans to develop a poster that will be on display in a staff hallway of the inpatient mental health hospital unit where the practice change took place. The findings of this DNP project will additionally be submitted for presentation at a national nursing conference and for publication in a peer-reviewed professional journal. Finally, this project will be submitted to Wright State University and the University of Toledo for partial fulfillment of a Doctor of Nursing Practice degree.

Conclusion

Suicide is an often preventable worldwide problem that claims over 800,000 lives annually and is the second highest cause of death for people between the ages of 15 and 29 (NIMH, 2017; WHO, 2017). The practice of asking mental health clients to agree to a no-suicide contract is widely used but is not based in evidence, discourages clinical judgment, and can have ethical implications for the mental health client (Bryan et al., 2017). The use of a standardized suicide risk assessment tool can address these concerns (Façanha et al., 2016; Kozel et al., 2016). The NGASR was selected from a variety of suicide risk assessment tools for incorporation into clinical practice on an inpatient mental health hospital unit in the Midwestern U.S.A. The NGASR has been shown to be based in evidence, encourages nursing clinical judgment with determining when to place mental health clients with safety sitters, and is

ethically considerate of the mental health client. This DNP project was able to provide an overview of the evidence behind the NGASR, the process of implementation in the inpatient mental health hospital setting, and the resulting effects of the nursing practice change and mental health client outcomes. After analysis of findings, it is recommended the NGASR undergo further incorporation and study on inpatient mental health hospital units to determine if utilizing the EHR is able to mitigate nurses' perception of increased workload.

References

- Barker, P. & Buchanan-Barker, P. (2005). *The tidal model: A guide for mental health professionals*. New York, NY: Routledge.
- Bryan, C. J., Mintz, J., Clemans, T. A., Leeson, B., Burch, T. S., Williams, S. R., . . . & Rudd, M. D. (2017). Effect of crisis response planning vs. contracts for safety on suicide risk in U. S. Army soldiers: A randomized clinical trial. *Journal of Affective Disorders*, 212, 64-72. doi: 10.1016/J.JAD.2017.01.028
- Centers for Disease Control and Prevention. (2017). Ten leading causes of death and injury. Retrieved from <http://www.cdc.gov/injury/wisqars/leadingcauses.html>
- Cincinnati Children's Hospital Medical Center. (2017). *Evidence evaluation tools & resources (LEGEND)*. Retrieved from <https://www.cincinnatichildrens.org/service/j/anderson-center/evidence-based-care/legend>
- Cutcliffe, J. R., & Barker, P. (2004). The nurses' global assessment of suicide risk (NGASR): Developing a tool for clinical practice. *Journal of Psychiatric and Mental Health Nursing*, 11(4), 393-400. doi: 10.1111/j.1365-2850.2003.00721.x
- Cutcliffe, J. & Santos, J. C. (2012). *Suicide and self-harm: An evidence-informed approach*. London: Quay Books.
- Duffy, J. (2016). Using Gantt charts to get things done. *PC Magazine*, 133-138.
- Emergency Nurses Association. (2012). *Clinical practice guideline: Suicide risk assessment*.

Retrieved from <http://publish.ena.org/practice-research/research/CPG/Documents/SuicideRiskAssessmentCPG.pdf>

- Façanha, J., Santos, J. C., & Cutcliffe, J. (2016). Assessment of suicide risk: Validation of the nurses' global assessment of suicide risk index for the Portuguese population. *Archives of Psychiatric Nursing*, 30(4), 470-475. doi: 10.1016/j.apnu.2016.04.009
- Farrow, T. L. (2003). No suicide contracts' in community crisis situations: A conceptual analysis. *Journal of Psychiatric and Mental Health Nursing*, 10(2), 199-202. doi: 10.1046/j.1365-2850.2003.00540.x
- Gramaglia, C., Feggi, A., Bergamasco, P., Bert, F., Gattoni, E., Marangon, D., . . . & Zeppegho, P. (2016). Clinical characteristics associated with suicide attempts in clinical settings: A comparison of suicidal and non-suicidal depressed inpatients. *Frontiers in Psychiatry*, 7, 1-6. doi: 10.3389/fpsy.2016.00109
- Jahn, D. R., Quinnett, P., & Ries, R. (2016). The influence of training and experience on mental health practitioners' comfort working with suicidal individuals. *Professional Psychology: Research and Practice*, 47, 130-138. doi:10.1037/pro0000070
- Jordan, J. T. & McNiel, D. E. (2018). Characteristics of a suicide attempt predict who makes another attempt after hospital discharge: A decision-tree investigation. *Psychiatry Research*, 268, 317-322. doi:10.1016/J.PSYCHRES.2018.07.040
- Kozel, B., Grieser, M., Abderhalden, C. & Cutcliffe, J. R. (2016). Inter-rater reliability of the

- German version of the global assessment of suicide risk scale. *International Journal of Mental Health Nursing*, 25(5), 409-417. doi: 10.1111/inm.12193
- Levin, R. F., Keefer, J. M., Marren, J., Vetter, M., Lauder, B., & Sobolewski, S. (2010). Evidence-based practice improvement: Merging 2 paradigms. *Journal of Nursing Care Quality*, 25(2), 117-126.
- Lewis, L. M. (2007). No-harm contracts: A review of what we know. *Suicide and Life-Threatening Behavior*, 37(1), 50-57.
- McMyler, C., & Pryjmachuk, S. (2008). Do 'no-suicide' contracts work? *Journal of Psychiatric and Mental Health Nursing*, 15(6), 512-522. doi: 10.1111/j.1365-2850.2008.01286.x
- Munro, B. H. (2005). *Statistical methods for health care research* (5th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.
- National Alliance on Mental Illness. (2017). Risk of suicide. Retrieved from <https://www.nami.org/Learn-More/Mental-Health-Conditions/Related-Conditions/Suicide>
- National Institute of Mental Health. (2015). *Suicide in America: Frequently asked questions*. Retrieved from <http://www.nimh.nih.gov/health/publications/suicide-faq/index.shtml>
- National Institute of Mental Health. (2016). *Depression*. Retrieved from <https://www.nimh.nih.gov/health/topics/depression/index.shtml>
- National Institute of Mental Health. (2017). *Suicide prevention*. Retrieved from

<https://www.nimh.nih.gov/health/topics/suicide-prevention/index.shtml>

NGASR Survey. (2018). Unpublished raw data.

Puskar, K., & Urda, B. (2011). Examining the efficacy of no-suicide contracts in inpatient psychiatric settings: Implications for psychiatric nursing. *Issues in Mental Health Nursing*, 32(12), 785-788. doi: 10.3109/01612840.2011.599476

Registered Nurses' Association of Ontario. (2009). *Assessment and care of adults at risk for suicidal ideation and behaviour*. Retrieved from http://rnao.ca/sites/rnao-ca/files/Assessment_and_Care_of_Adults_at_Risk_for_Suicidal_Ideation_and_Behaviour_0.pdf

The Joint Commission. (2016). Sentinel events. Retrieved from http://www.jointcommission.org/assets/1/6/SE_CAMBHC_2016Upd1.pdf

The W. Edwards Deming Institute. (2016). The plan, do, study, act (PDSA) cycle. Retrieved from <https://www.deming.org/theman/theories/pdsacycle>

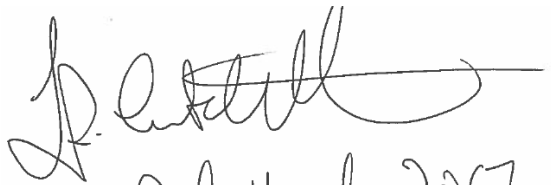
van Veen, M., van Weeghel, I., Koekkoek, B., & Braam, A. (2015). Structured assessment of suicide risk in a psychiatric emergency service: Psychometric evaluation of the Nurses' Global Assessment of Suicide Risk scale (NGASR). *International Journal of Social Psychiatry*, 61(3), 287-296. doi: 10.1177/0020764014543311

World Health Organization. (2017). Suicide fact sheet. Retrieved from <http://www.who.int/mediacentre/factsheets/fs398/en/>

Appendix A: Permission to Use NGASR

This gives permission to use the Nurses' Global Assessment of Suicide Risk scale to Tyler D. Green for the purpose of his Doctorate of Nursing Practice project. The instrument may be reproduced in a quantity appropriate for this project.

Signed,



2nd March 2017.

John R. Cutcliffe, PhD

Date: 2 March 2017

Appendix B: Nursing Survey

Nurses Global Assessment of Suicide Risk (NGASR) Survey

To be completed by nurses currently performing suicide risk assessments on clients in a mental health inpatient hospital unit

Please share how long (in years) you have been performing suicide risk assessments as a nurse.

Please share your opinion on the process of changing to move away from using the no suicide contract and incorporating the NGASR into your nursing practice.

Please share your opinion on how the NGASR was able to change your practice and the quality of care received by clients in the mental health inpatient hospital unit setting.

Appendix C: Literature Evaluation Tables

Literature Evaluation Related to the Nurses' Global Assessment of Suicide Risk (NGASR)

Article Citation	Conceptual Framework and Purpose	Design/ Method	Sample/ Setting	Major Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Cutcliffe, J. R., & Barker, P. (2004). The nurses' global assessment of suicide risk (NGASR): Developing a tool for clinical practice. <i>Journal of Psychiatric and Mental Health Nursing</i> , 11(4), 393-400. doi: 10.1111/j.1365-2850.2003.00721.x	Conceptual Framework - Not used Study Purpose - To determine face validity, content validity, and user satisfaction of NGASR in clinical practice	Design -Interview with two expert panels Method -For the second expert panel, education to 18 nurses was provided over 4 days. A variety of suicide assessment tools were considered before reaching a consensus regarding NGASR's content validity.	Sample -Senior clinical nurses, nursing academics, and senior psychiatrists Setting -A mental health unit in the UK	-Face validity -Content validity -User satisfaction in clinical practice	-Consensus by two expert panels	-None used	-The NGASR was determined to have high face validity, high content validity, and consistent user satisfaction.	Strengths -NGASR is simple to use and reports high face/content validity and user satisfaction. Limitations -There was no large scale quantitative validation. -Authors are not clear on the number and credentials of the first expert panel. Risk/Benefit - Risk is high due to affecting the assessment of suicidal patients. Further testing required. Can save lives if effective. Feasibility -Incorporation of the NGASR is feasible for the practice setting. Level of Evidence -5a

Literature Evaluation Related to the Nurses' Global Assessment of Suicide Risk (NGASR)

Article Citation	Conceptual Framework and Purpose	Design/ Method	Sample/ Setting	Major Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Façanha, J., Santos, J. C., & Cutcliffe, J. (2016). Assessment of suicide risk: Validation of the nurses' global assessment of suicide risk index for the Portuguese population. <i>Archives of Psychiatric Nursing</i> , 30(4), 470-475. doi: 10.1016/j.apnu.2016.04.009	Conceptual Framework - Not used Study Purpose - To translate, adapt, and validate the NGASR for the Portuguese population, in addition to measuring "its psychometric properties in patients with depressive symptoms and risk factors for suicidal behaviors" (p. 471).	Design - Mixed Method Method - Expert panel to determine content validity, pilot sample followed by larger sample. Results compared to other validated risk assessment tools (SIQ, BDI, and DASS-21).	Sample - 3 patients in pilot, 109 accidental, non-probability patients at risk of suicide after pilot -33% M and 67% F aged 19-79 - Panel of 4 expert nurses from clinical and academic settings Setting -Inpatient and outpatient facilities in Portugal	- Content Validity - Criterion Validity - Construct Validity	- Consensus by expert panel - Data was collected using a questionnaire	-Cronbach's alpha for internal consistency -linear regression between NGASR and other assessment tools for criterion validity - exploratory principal components factor analysis with orthogonal varimax rotation, Bartlett's sphericity test, and Kaiser-Meyer-Olkin index for construct validity	- Strong positive linear association ($R=0.830$) and statistical significance ($p<0.05$) between NGASR and other assessment tools -Cronbach's alpha was 0.49 (moderate internal consistency) -PCFA with VR revealed 6 factors. 15 predictive variables explained 66.92% of total variance -Expert panel reached consensus	Strengths - Large sample size Limitations -Further testing is needed for other populations including adolescents Risk/Benefit -Altering the assessment of suicidal patients is risky. Further testing needed. Can save lives if effective Feasibility -Incorporation of the NGASR is feasible for the practice setting Level of Evidence -2a

Literature Evaluation Related to the Nurses' Global Assessment of Suicide Risk (NGASR)

Article Citation	Conceptual Framework and Purpose	Design/ Method	Sample/ Setting	Major Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Kozel, B., Grieser, M., Abderhalde n, C. & Cutcliffe, J. R. (2016). Inter-rater reliability of the German version of the global assessment of suicide risk scale. <i>International Journal of Mental Health Nursing</i> , 25(5), 409-417. doi: 10.1111/in m.12193	Conceptual Framework - Not used Study Purpose - To translate, adapt, and validate the inter-rater reliability of the German NGASR	Design - Cross sectional Method - Pretest were conducted to develop a procedure guideline - After training, participants were asked to complete 12 case studies using the NGASR	Sample - Convenience - 13 multi-disciplinary professionals (3 physicians, 9 nurses, and 1 occupational therapist) -4 Male, 9 Female Setting - Bern, Switzerland on a gerontopsychi atric wards (acute and rehabilitation)	- Inter-rater reliability	- The NGASR was completed on 12 case studies by 13 mental health professionals	- Cohen's kappa - Intraclass correlation -AC1	- Median kappa was 0.71 (0.58-0.81) - ICC scores of 0.90 (absolute agreement, 95% CI: (0.81-0.96) and 0.91 (consistency , 95% CI: 0.84-0.97) - AC1 found 9 items had very high rater agreement, 7 items had a high rater agreement	Strengths - Study demonstrates multidisciplinary inter-rater reliability Limitations -Further testing is needed for other populations including adolescents Risk/Benefit - Risk is high due to affecting the assessment of suicidal patients. Further testing required. Can save lives if effective Feasibility -Incorporation of the NGASR is feasible for the practice setting Level of Evidence -4a

Literature Evaluation Related to the Nurses' Global Assessment of Suicide Risk (NGASR)

Article Citation	Conceptual Framework and Purpose	Design/ Method	Sample/ Setting	Major Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
van Veen, M., van Weeghel, I., Koekkoek, B., & Braam, A. (2015). Structured assessment of suicide risk in a psychiatric emergency service: Psychometric evaluation of the Nurses' Global Assessment of Suicide Risk scale (NGASR). <i>International Journal of Social Psychiatry</i> , 61(3), 287-296. doi: 10.1177/0020764014543311	Conceptual Framework - Not used Study Purpose - To determine the reliability, validity, interpretability, and feasibility of the NGASR	Design -Mixed method Method -Assessment completed by nursing and medical professional . One subsample also completed the Suicide Intention Scale (SIS), another subsample followed up with pts after 6 months	Sample -252 pts aged 18 and older, 54.4% M and 45.6% F -excluded pts who were unable to communicate or understand Dutch language Setting -Between Jan and May 2010 in the central psychiatric emergency service of Utrecht, Netherlands	-Reliability -Validity -Interpretability -Feasibility	-Comparison was made with SIS score in 20 pts -Psychiatric interviews were assessed while being blinded to NGASR and SIS scores -Reports were coded after following up with a subsample after 6 months	-Intraclass correlation for reliability -Principal component analysis -Multinomial regression -Cronbach's alpha -sensitivity (high) and specificity (low) were calculated	- ICC scores of at least .8 showed inter-rater reliability. -Reported poor predictive validity (multinomial regression) and good face validity (eigenvalues >1 for 5 items). -Cronbach's alpha was 0.45 (poor internal consistency) -Can assist clinical judgment but requires further testing, especially in crisis care	Strengths -Large sample size and availability of follow up data Limitations -Studies the translated Dutch version of NGASR Risk/Benefit -Altering the assessment of suicidal patients is risky. Further testing needed. Can save lives if effective Feasibility -Incorporation of the NGASR can assist judgment and is feasible Level of Evidence -2a

Literature Evaluation Related to the Nurses' Global Assessment of Suicide Risk (NGASR)

Article Citation	Conceptual Framework and Purpose	Design/ Method	Sample/ Setting	Major Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Registered Nurses' Association of Ontario. (2009). <i>Assessment and care of adults at risk for suicidal ideation and behaviour</i> . Retrieved from http://rnao.ca/sites/rnao-ca/files/Assessment_and_Care_of_Adults_at_Risk_for_Suicidal_Ideation_and_Behaviour_0.pdf	Conceptual Framework - Not used Study Purpose - Promoting best practices for nurses to use when working with suicidal adults to reduce suicide rates	Design - Clinical Practice Guideline Method - A multi-disciplinary panel of experts was formed and a review of the literature was conducted relating to care for the suicidal adult client. Feedback to recommendations were provided by external stakeholders (clients, families)	Sample - Not applicable Setting - Nurses working with suicidal adults in "a variety of practice settings, across the continuum of care" (RNAO, 2009, p. 16)	- Practice recommendations -Educational recommendations -Organization and policy recommendations	- Articles found in the literature related to care for suicidal adults were brought before a multi-disciplinary panel of experts.	- A consensus from the panel of multi-disciplinary experts regarding information from the literature was necessary for recommendations to be included in the guideline - Feedback to the recommendations were provided by external stakeholders, which were factored into the final recommendations	- The NGASR was identified as a tool "that may be helpful in the assessment of suicide risk" (RNAO, 2009, p. 101)	Strengths - Provides a broad overview for caring for the suicidal client Limitations - Does not take into account the most up-to-date research regarding the NGASR Risk/Benefit - Altering the assessment of suicidal patients is risky. Further testing needed. Can save lives if effective Feasibility - Feasible Level of Evidence - 5a

Literature Evaluation Related to the Nurses' Global Assessment of Suicide Risk (NGASR)

Article Citation	Conceptual Framework and Purpose	Design/ Method	Sample/ Setting	Major Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Emergency Nurses Association . (2012). <i>Clinical practice guideline: Suicide risk assessment</i> . Retrieved from http://publsh.ena.org/practice-research/research/CPG/Documents/SuicideRiskAssessmentCPG.pdf	Conceptual Framework - Not used Study Purpose - To determine risk assessment tools and predictors that are effective in screening for self-harm in the emergency care setting.	Design - Clinical Practice Guideline Method - A comprehensive literature search was conducted. Literature was reviewed and analyzed using the ENA Guideline for the Development of Clinical Practice Guidelines	Sample - Not applicable Setting - This clinical practice guideline is meant for the emergency care setting	- Suicide risk assessment tools that are appropriate for the emergency care setting	- Articles found in the comprehensive literature review	- Data from the comprehensive literature search was analyzed using the ENA Guideline for the Development of Clinical Practice Guidelines - Evidence was leveled using the Melnyk & Fineout-Overholt grading system	- The NGASR was determined to have Level B – Moderate grade as a suicide risk assessment tool that is feasible, valid and reliable for use in the emergency care setting for the adult client population	Strengths - Provides overview of a large number of suicide risk assessment tools. Limitations - Does not take into account the most up-to-date research regarding the NGASR Risk/Benefit - Altering the assessment of suicidal patients is risky. Further testing needed. Can save lives if effective Feasibility - Feasible for emergency care setting Level of Evidence - 5a

© 2007 Fineout-Overholt.

Literature Evaluation Related to the Nurses' Global Assessment of Suicide Risk (NGASR)

Article Citation	Conceptual Framework and Purpose	Design/ Method	Sample/ Setting	Major Variables Studied	Measure	Data Analysis	Findings	Appraisal: Worth to Practice
Gramaglia, C., Feggi, A., Bergamasco, P., Bert, F., Gattoni, E., Marangon, D., . . . & Zeppugno, P. (2016). Clinical 63tempt63ristic associated with suicide attempts in clinical settings: A comparison of suicidal and non-suicidal depressed inpatients. <i>Frontiers in Psychiatry</i> , 7, 1-6.	Conceptual Framework - Not used Study Purpose - "To compare socio-demographic, clinical, and treatment variables in depressed inpatient admitted to our psychiatry ward following a suicide attempt and those admitted for any other reason" (p. 2).	Design - Case Control Method - Sample was divided into two groups of depressed admissions to the hospital over a year, recent suicide attempts and no recent suicide 63tempt. Clinical and socio-demographic information was gathered.	Sample -Convenience sample of clients admitted for depression - 46 pts aged 18 and older, 23.91% M and 79.09 % F -People diagnosed with dementia or mental retardation were excluded. Setting - Azienda Ospedaliero Universitaria Maggiore della Carità Hospital, an inpatient facility in Piedmont, Italy	- Age - Gender - Psychiatric comorbidity - Physical comorbidity -Medication therapy -Previous suicide attempts -MADRS scores -NGASR scores	- Information was gathered through clinical interviews, the MADRS, and the NGASR	- Chi-squared test for categorical variables - t-test for continuous variables - multivariate logistic regression to assess potential predictors of suicide attempts	- Recent suicide attempts were not related to the severity of depressive symptoms measured with the MADRS -NGASR scores significantly decreased for clients between admission and discharge from the hospital -Previous suicide attempts are a significant risk factor for future attempts.	Strengths - Data was analyzed in a real-life hospital setting Limitations - Modest sample size with limited number of variables (unable to account for all clinical and/or socio-demographic factors for suicide attempts) Risk/Benefit - Altering the assessment of suicidal patients is risky. Further testing needed. Can save lives if effective Feasibility - NGASR is feasible for inpatient setting. Level of Evidence - 4a

Appendix D: Table of Evidence Levels



LEGEND
Let Evidence Guide Every New Decision
Table of Evidence Levels

TABLE OF EVIDENCE LEVELS: Levels of Individual Studies by Domain, Study Design, & Quality

DOMAIN OF CLINICAL QUESTION	TYPE OF STUDY / STUDY DESIGN																			
	Systematic Review Meta-Analysis	Meta-Synthesis	RCT ⁺	CCT ⁺	Psychometric Study	Qualitative Study	Cohort – Prospective	Cohort – Retrospective	Case – Control	Longitudinal (Before/After, Time Series)	Cross – Sectional	Descriptive Study Epidemiology Case Series	Quality Improvement (PDSA)	Mixed Methods Study	Decision Analysis Economic Analysis Computer Simulation	Guidelines	Case Reports N-of-1 Study	Bench Study	Published Expert Opinion	Local Consensus Published Abstracts
Intervention	1a* 1b* <i>Treatment, Therapy, Prevention, Harm, Quality Improvement</i>		2a 2b	3a 3b		4a 4b	3a 3b	4a 4b	4a 4b	4a 4b	4a 4b	4a 4b	4a 4b	2a/2b 3a/3b 4a/4b	5a 5b	5a 5b	5a 5b	5a 5b	5a 5b	5
Diagnosis / Assessment		1a 1b		2a 2b	2a 2b		3a 3b	4a 4b			4a 4b	4a 4b		2a/2b 3a/3b 4a/4b	5a 5b	5a 5b	5a 5b	5a 5b	5a 5b	5
Prognosis	1a 1b					2a 2b	3a 3b	4a 4b	4a 4b		4a 4b	4a 4b		2/3/4 a/b	5a 5b	5a 5b	5a 5b	5a 5b	5a 5b	5
Etiology / Risk Factors	1a 1b		2a 2b	3a 3b		3a 3b	4a 4b	4a 4b		4a 4b	4a 4b	4a 4b		2/3/4 a/b	5a 5b	5a 5b	5a 5b	5a 5b	5a 5b	5
Incidence	1a 1b					2a 2b	3a 3b					4a 4b				5a 5b	5a 5b	5a 5b	5a 5b	5
Prevalence	1a 1b								2a 2b		3a 3b	4a 4b				5a 5b	5a 5b	5a 5b	5a 5b	5
Meaning / KAB ⁺		1a 1b			2a 2b									2/3/4 a/b		5a 5b	5a 5b	5a 5b	5a 5b	5

* a = good quality study b = lesser quality study

⁺ CCT = Controlled Clinical Trial KAB = Knowledge, Attitudes, and Beliefs RCT = Randomized Controlled Trial

Shaded boxes indicate study design may not be appropriate or commonly used for the domain of the clinical question.

Development for this table is based on:

1. Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from <http://www.cebm.net/index.aspx?o=1025>.
2. Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.

Copyright © 2006-2012 Cincinnati Children's Hospital Medical Center; all rights reserved.

March 26, 2012

James M. Anderson Center for Health Systems Excellence | Center for Professional Excellence | Occupational Therapy and Physical Therapy | Edward L. Pratt Research Library
Evidence-Based Decision Making – www.cincinnatichildrens.org/evidence

Page 1 of 1

Appendix E: Table of Recommendation for Practice Change

Table of Recommendation for Practice Change				
Recommendation	Reference in Support of Recommendation	Rationale	Level of Evidence (LEGEND)	Quality of Evidence Rating (LEGEND)
1. Incorporate the NGASR on an inpatient mental health hospital unit to assist nurses with assessing client suicide risk and provide guidance on placing clients with safety sitters.	Cutcliffe & Barker, 2004	NGASR is developed incorporating EBP. High face and content validity on NGASR determined by expert panel. Reports staff satisfaction with assessment and simplicity of NGASR use.	5 Expert Opinion	a
	Façanha et al., 2016	Study with large sample size (n = 109). High content validity of NGASR determined by expert panel. Criterion validity of NGASR showed strong correlation with other well-known risk assessment tools. Moderate internal	2 Mixed Method	a

		consistency measured.		
	Kozel et al., 2016	Study was able to show a high level of internal validity between interdisciplinary healthcare professionals (n = 13) using the NGASR.	4 Cross-sectional	a
	van Veen et al., 2015	Study with large sample size (n = 252). High face validity of NGASR determined by expert panel. The study also demonstrated good levels of interrater reliability and content validity for the NGASR. Construct validity of the NGASR was determined to be adequate. Study described NGASR is “easy in its use” (p. 294).	2 Mixed Method	a
	Registered Nurses’ Association of Ontario, 2009	A multidisciplinary panel of experts and external stakeholders determined the NGASR was a tool “that may be helpful in the assessment of	5 Clinical Practice Guideline	a

		suicide risk” (RNAO, 2009, p. 101).		
	Emergency Nurses Association, 2012	A comprehensive literature search was analyzed using the ENA Guideline for the Development of Clinical Practice Guidelines. Evidence was leveled using the Melnyk & Fineout-Overholt grading system. The NGASR was determined to have Level B – Moderate grade as a suicide risk assessment tool that is feasible, valid and reliable for use in the emergency care setting for the adult client population.	5 Clinical Practice Guideline	a
	Gramaglia et al., 2016	Study used multivariate analysis to try and determine factors linked with suicide risk. NGASR was used with clients on an inpatient setting, showed a decline in scores as clients progressed to discharge.	4 Case-control	a

Appendix F: Expert Appraisal Form

Cincinnati Children's		LEGEND: Evidence Appraisal of a Single Study All Domains Expert Opinion	
Project/Topic of your Clinical Question: _____			
Reviewer: _____	Today's Date: _____	Final Evidence Level: _____	
Article Title: _____			
Year: _____	First Author: _____	Journal: _____	
Do the aim/purpose/objectives assist in answering your clinical question? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
• Aim/Purpose/Objectives: _____			
<hr/> When reading the bolded questions, consider the bulleted questions to help answer the main question. If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance: CCHMC Evidence Experts: http://groups.ce/NewEBC/EBDMHelp.htm Unfamiliar terms can be found in the LEGEND Glossary: http://groups.ce/NewEBC/EBCFiles/GLOSSARY-EBDM.pdf			
BASIC ELEMENTS OF AN EXPERT OPINION / REVIEW ARTICLE			
1. Is the author a known expert in the field being studied? • What are the author's credentials? <i>Comments:</i> _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
2. Does the author have a known bias? <i>Comments:</i> _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
3. Is the patient population, problem, or issue clearly described? <i>Comments:</i> _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
4. Is the literature search clearly described? <i>Comments:</i> _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
5. Is the date range of the cited literature appropriate and current? <i>Comments:</i> _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
6. What types of research are cited (e.g., animal model, basic science, clinical studies)? <i>Comments:</i> _____			
7. Is more than one point of view explained, reported, or referenced? <i>Comments:</i> _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Copyright © 2006-2012 Cincinnati Children's Hospital Medical Center; all rights reserved. April 9, 2012 CCHMC Evidence Collaboration: James M. Anderson Center for Health Systems Excellence Center for Professional Excellence Edward L. Pratt Research Library Evidence-Based Decision Making – www.cincinnatichildrens.org/evidence Page 1 of 3			

8. Were any conclusions clearly presented in the article? ☐ Yes ☐ No ☐ Unknown
- If applicable, were any adverse events clearly described?
- Comments:

9. Was there freedom from conflict of interest? ☐ Yes ☐ No ☐ Unknown
- Sponsor/Funding Agency or Authors
- Comments:

APPLICABILITY: CAN I APPLY THIS EXPERT OPINION / GENERAL REVIEW INFORMATION?

10. Can the results be applied to my population of interest? ☐ Yes ☐ No ☐ Unknown
- Is the setting described in the article applicable to my population of interest?
 - Do the patient outcomes apply to my population or question of interest?
 - Were the patients in this article similar to my population of interest?
- Comments:

11. Are my patient's and family's values and preferences satisfied by the knowledge gained from this article (such as outcomes considered)? ☐ Yes ☐ No ☐ Unknown
- Comments:

12. Would you include this article in development of a care recommendation? ☐ Yes ☐ No ☐ Unknown
- Comments:

ADDITIONAL COMMENTS OR CONCLUSIONS ("TAKE-HOME POINTS"):

- Consider each "No" answer and the degree to which this limitation is a threat to the validity of the results, then check the appropriate box to assign the level of quality for this study/article.
- Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article.

☐ Good Quality Expert Opinion / General Review [5a]
☐ Lesser Quality Expert Opinion/General Review [5b]
☐ Not Applicable

* RCT = Randomized Controlled Trial; CCT = Controlled Clinical Trial

1. Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.
2. Guyatt, G.; Rennie, D.; Evidence-Based Medicine Working Group; and American Medical Association.: *Users' guides to the medical literature : a manual for evidence-based clinical practice. Users' guides to the medical literature : a manual for evidence-based clinical practice*. "JAMA & archives journals". Chicago, IL, 2002
3. Melnyk, B. M. and E. Fineout-Overholt (2005). *Evidence-based practice in nursing & healthcare: a guide to best practice*. Philadelphia, Lippincott Williams & Wilkins.
4. Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from <http://www.cebm.net/index.aspx?o=1025>.
5. Local Consensus

Appendix G: Mixed Method Appraisal Form

Cincinnati Children's		LEGEND: Evidence Appraisal of a Single Study All Domains Mixed Methods Study (Qualitative & Quantitative)	
Project/Topic of your Clinical Question: _____			
Reviewer: _____	Today's Date: _____	Final Evidence Level: _____	
Article Title: _____		Mixed Methods _____	
		<i>Qualitative</i> _____	
First Author: _____		<i>Quantitative</i> _____	
Year: _____	Journal: _____		
Do the study aim/purpose/objectives and inclusion/exclusion criteria assist in answering your clinical question? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
<ul style="list-style-type: none"> • Study Aim/Purpose/Objectives: • Inclusion Criteria: • Exclusion Criteria: 			
Is a mixed methods study congruent with the author's study purpose above? Comments: _____ <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
When reading the bolded questions, consider the bulleted questions to help answer the main question. If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance: CCHMC Evidence Experts: http://groups.ce/NewEBC/EBDMHelp.htm Unfamiliar terms can be found in the LEGEND Glossary: http://groups.ce/NewEBC/EBCFiles/GLOSSARY-EBDM.pdf			
VALIDITY: ARE THE RESULTS OF THE QUALITATIVE AND QUANTITATIVE STUDIES VALID OR CREDIBLE?			
1. Were two different methods or approaches used in the study? <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Core Component: <input type="checkbox"/> Qualitative <input type="checkbox"/> Quantitative </div> <div style="width: 45%;"> Supplemental Component: <input type="checkbox"/> Qualitative <input type="checkbox"/> Quantitative </div> </div> Comments: _____			
2. Complete the appropriate evidence appraisal forms for each component (e.g., RCT, Descriptive, Qualitative Study).			
3. If applicable, was (were) the <i>qualitative</i> component(s) of the study well-developed (i.e., [a] not [b]), based on appraisal using the Meaning/KAB – Qualitative Study evidence appraisal form? Evidence Level(s): _____ Comments: _____			
4. If applicable, was (were) the <i>quantitative</i> component(s) of the study well-developed (i.e., [a] not [b]), based on appraisal using the appropriate evidence appraisal form for that study design (e.g., RCT, Descriptive)? Evidence Level(s): _____ Comments: _____			

Copyright © 2006-2012 Cincinnati Children's Hospital Medical Center; all rights reserved. April 9, 2012
 CCHMC Evidence Collaboration: James M. Anderson Center for Health Systems Excellence | Center for Professional Excellence | Edward L. Pratt Research Library
 Evidence-Based Decision Making – www.cincinnatichildrens.org/evidence Page 1 of 3

RELIABILITY: ARE THESE VALID STUDY RESULTS IMPORTANT?

5. Were the two components used to inform each other for joined, comprehensive results or discussion?

☐ Yes ☐ No ☐ Unknown

Note: A mixed methods study includes combined data analysis or separate analysis with merged discussion. Separate analysis and separate discussion would not qualify as a "mixed methods" study.

Comments:

6. What are the main mixed results of the study? (e.g., Helpful data: Page #, Table #, Figures, Graphs)

7. Were the mixed results significant?

☐ Yes ☐ No ☐ Unknown

Comments:

APPLICABILITY: CAN I APPLY THESE VALID, IMPORTANT STUDY RESULTS TO TREATING MY PATIENTS?

8. Can the results be applied to my population of interest?

☐ Yes ☐ No ☐ Unknown

- Is the setting of the study applicable to my population of interest?
- Do the patient exposures, experiences, and outcomes apply to my population or question of interest?
- Were the patients in this study similar to my population of interest?

Comments:

9. Are my patient's and family's values and preferences satisfied by the knowledge gained from this study?

☐ Yes ☐ No ☐ Unknown

Comments:

10. Would you include this study/article in development of a care recommendation?

☐ Yes ☐ No ☐ Unknown

Comments:

ADDITIONAL COMMENTS OR CONCLUSIONS ("TAKE-HOME POINTS"):

- Consider each "No" answer and the degree to which this limitation is a threat to the rigor of the results.
- Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article.

1. The Core Component determines the number of the Evidence Level [2, 3, 4].
2. In order to assign an evidence level with an [a] for the mixed methods appraisal, at least 1 of the components must be assigned an evidence level with an [a].
3. Consider overall how well the mixed methods study was done, when assigning the final level.

THE EVIDENCE LEVEL IS:

Good Quality Mixed Methods Study:	<input type="checkbox"/> [2a]	<input type="checkbox"/> [3a]	<input type="checkbox"/> [4a]
Lesser Quality Mixed Methods Study:	<input type="checkbox"/> [2b]	<input type="checkbox"/> [3b]	<input type="checkbox"/> [4b]
<input type="checkbox"/> Not Valid, Reliable, Credible, or Applicable			


Table of Evidence Levels																				
		TYPE OF STUDY / STUDY DESIGN																		
		Systematic Review Meta-Analysis	Meta-Synthesis	RCT *	CC *	Psychometric Study	Qualitative Study	Cohort - Prospective	Cohort - Retrospective	Case - Control	Longitudinal (Before/After, Time Series)	Cross - Sectional	Descriptive Study Epidemiology Case Series	Quality Improvement (PDSA)	Mixed Methods Study	Decision Analysis Economic Analysis Computer Simulation	Guidelines	Case Reports N-of-1 Study	Bench Study	Published Expert Opinion
DOMAIN OF CLINICAL QUESTION		1a										4a		2/3/4	5a	5a	5a	5a	5a	5a
All Domains		1b										4b		a/b	5b	5b	5b	5b	5b	5b
																				5

*RCT = Randomized Controlled Trial; CCT = Controlled Clinical Trial

Development for this appraisal form is based on:

- Cresswell, J. W. & Plano Clark, V. L. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: SAGE.
- Cresswell, J., and Tashakkori, A.: *Developing Publishable Mixed Methods Manuscripts*. *Journal of Mixed Methods Research*, 1(2): 107-111, 2007.
- Denzin, N. & Lincoln, Y. (2005). *The Sage Handbook of Qualitative Research*, Sage Publications: Thousand Oaks, California.
- Finout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.
- Freshwater, D. (2004). *Deconstructing Evidence Based Practice*, Routledge: New York: New York.
- Guba, Y. & Lincoln, E. (1989). *Fourth Generation Evaluation*, Sage Publications: Newbury Part, California.
- Guyatt, G.; Rennie, D.; Evidence-Based Medicine Working Group.; and American Medical Association.: *Users' guides to the medical literature : a manual for evidence-based clinical practice. Users' guides to the medical literature : a manual for evidence-based clinical practice: "JAMA & archives journals."* Chicago, IL, 2002.
- Leininger, M. (1991). *Culture care diversity and universality: A theory of Nursing*, National League for Nursing Press: New York
- Leininger, M. & McFarland, M. (2006). 2nd Ed. *Culture care diversity and universality: A worldwide nursing theory*. Jones & Bartlett Publishers: Sudbury, Mass.
- Lincoln, Y. & Guba, E. (1985). *Naturalistic Inquiry*, Sage Publications: Newbury Park, California.
- Lowie, J.: Clear as mud: results and the use of mixed methods. *Australian & New Zealand Journal of Public Health*, 34(4): 344-5, 2010.
- Morse, J., Swanson, J., & Kuzal, A. (2001). *The Nature of Qualitative Evidence*, Sage Publications: Thousand Oaks, California.
- Morse, J. M. & Niehaus, L. (2009). *Mixed Method Design: Principles and Procedures*. Walnut Creek, CA: Left Coast Press Inc.
- Palinkas, L. A.; Aarons, G. A.; Horwitz, S.; Chamberlain, P.; Hurlburt, M.; and Landsverk, J.: *Mixed method designs in implementation research*. *Administration & Policy in Mental Health*, 38(1): 44-53, 2011.
- Phillips, et al: *Oxford Centre for Evidence-based Medicine Levels of Evidence*. 2001. Last accessed Nov 14, 2007 from <http://www.cebm.net/index.aspx?o=1075>.

Appendix H: Cross-Sectional Appraisal Form

	LEGEND: Evidence Appraisal of a Single Study Intervention Cross-Sectional Study		
Project/Topic of your Clinical Question: _____			
Reviewer: _____	Today's Date: _____	Final Evidence Level: _____	
Article Title: _____			
Year: _____	First Author: _____	Journal: _____	
Do the study aim/purpose/objectives and inclusion/exclusion criteria assist in answering your clinical question? <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown </div> <ul style="list-style-type: none"> Study Aim/Purpose/Objectives: Inclusion Criteria: Exclusion Criteria: 			
Is a cross-sectional study congruent with the author's study aim/purpose/objectives above? <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown </div> <p><i>Comments:</i> _____</p>			
<p>When reading the bolded questions, consider the bulleted questions to help answer the main question. If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance: CCHMC Evidence Experts: http://groups/ce/NewEBC/EBDMHelp.htm Unfamiliar terms can be found in the LEGEND Glossary: http://groups/ce/NewEBC/EBCFiles/GLOSSARY-EBDM.pdf</p>			
VALIDITY: ARE THE RESULTS OF THE CROSS-SECTIONAL STUDY VALID OR CREDIBLE?			
1. Were the study methods appropriate for the question? <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown </div> <ul style="list-style-type: none"> Were the study methods clearly described (e.g., setting, sample population)? Were the instruments clearly described? Were the data collected at one point in time? <p><i>Comments:</i> _____</p>			
2. Were instruments used to measure the outcomes valid and reliable? <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown </div> <ul style="list-style-type: none"> Were the instruments tested to be valid and reliable? <p><i>Comments:</i> _____</p>			
3. Were all appropriate variables (e.g., potential confounders, exposures, predictors) and interventions clearly described? <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown </div> <p><i>Comments:</i> _____</p>			
4. Were all appropriate outcomes clearly described? <div style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown </div> <p><i>Comments:</i> _____</p>			

Copyright © 2006-2012 Cincinnati Children's Hospital Medical Center; all rights reserved. April 9, 2012
 CCHMC Evidence Collaboration: James M. Anderson Center for Health Systems Excellence | Center for Professional Excellence | Edward L. Pratt Research Library
 Evidence-Based Decision Making – www.cincinnatichildrens.org/evidence Page 1 of 4

5. Were all participants accounted for at the conclusion of the study? ☐ Yes ☐ No ☐ Unknown
- Were withdrawals from the study explained?
 - Was the rate of attrition acceptable?
- Comments:

6. Was there freedom from conflict of interest? ☐ Yes ☐ No ☐ Unknown
- Sponsor/Funding Agency or Investigators
- Comments:

RELIABILITY: ARE THESE VALID STUDY RESULTS IMPORTANT?

7. Were the statistical analysis methods appropriate? ☐ Yes ☐ No ☐ Unknown
- Were the statistical analysis methods clearly described?
- Comments:

8. Did the study have a sufficiently large sample size? ☐ Yes ☐ No ☐ Unknown
- Was a power analysis described?
 - Did the sample size achieve or exceed that resulting from the power analysis?
 - Did each subgroup also have sufficient sample size (e.g., at least 6-12 participants)?
- Comments:

9. What are the main results of the study? (e.g., Helpful data: Page #, Table #, Figures, Graphs)

- What is the effect size? (How large was the treatment effect?)
- What were the measures of statistical uncertainty (e.g., precision)?
(Were the results presented with Confidence Intervals or Standard Deviations?)

10. Were the results statistically significant? ☐ Yes ☐ No ☐ Unknown
- Comments:

11. Were the results clinically significant? ☐ Yes ☐ No ☐ Unknown
- If potential confounders were identified, were they discussed in relationship to the results?
- Comments:

12. Were adverse events assessed?

☐ Yes ☐ No ☐ Unknown

Comments:

APPLICABILITY: CAN I APPLY THESE VALID, IMPORTANT STUDY RESULTS TO TREATING MY PATIENTS?

13. Can the results be applied to my population of interest?

☐ Yes ☐ No ☐ Unknown

- Is the treatment feasible in my care setting?
- Do the patient outcomes apply to my population or question of interest?
- Are the likely benefits worth the potential harm and costs?
- Were the patients in this study similar to my population of interest?

Comments:

14. Are my patient's and family's values and preferences satisfied by the treatment and its consequences?

☐ Yes ☐ No ☐ Unknown

Comments:

15. Would you include this study/article in development of a care recommendation?

☐ Yes ☐ No ☐ Unknown

Comments:

ADDITIONAL COMMENTS OR CONCLUSIONS ("TAKE-HOME POINTS"):

QUALITY LEVEL / EVIDENCE LEVEL

- Consider each "No" answer and the degree to which this limitation is a threat to the validity of the results, then check the appropriate box to assign the level of quality for this study/article.
- Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article

THE EVIDENCE LEVEL IS:

- ☐ Good Quality Cross-Sectional Study [4a]
☐ Lesser Quality Cross-Sectional Study [4b]
☐ Not Valid, Reliable, or Applicable

Table of Evidence Levels																	
DOMAIN OF CLINICAL QUESTION	TYPE OF STUDY / STUDY DESIGN																
	Systematic Review Meta-Analysis	RCT*	CCT*	Qualitative Study	Cohort - Prospective	Cohort - Retrospective	Case - Control	Longitudinal (Before/After, Time Series)	Cross - Sectional	Descriptive Study Epidemiology Case Series	Quality Improvement (PDCA)	Mixed Methods Study	Decision Analysis Economic Analysis Computer Simulation	Guidelines	Case Reports N-of-1 Study	Bench Study	Published Expert Opinion Local Consensus Published Abstracts
Intervention	1a	2a	3a	4a	3a	4a	4a	4a	4a	4a	4a	2/3/4 a/b	5a	5a	5a	5a	5
Treatment, Therapy, Prevention, Harm, Quality Improvement	1b	2b	3b	4b	3b	4b	4b	4b	4b	4b	4b		5b	5b	5b	5b	

* RCT = Randomized Controlled Trial; CCT = Controlled Clinical Trial

Development for this appraisal form is based on:

- Guyatt, G.; Rennie, D.; Evidence-Based Medicine Working Group.; and American Medical Association.: Users' guides to the medical literature : a manual for evidence-based clinical practice. *Users' guides to the medical literature : a manual for evidence-based clinical practice*. "JAMA & archives journals." Chicago, IL, 2002
- Melnik, B. M. and E. Fineout-Overholt (2005). Evidence-based practice in nursing & healthcare : a guide to best practice. Philadelphia, Lippincott Williams & Wilkins.
- Lohr, K. N. and T. S. Carey (1999). "Assessing "best evidence": issues in grading the quality of studies for systematic reviews." *Joint Commission Journal on Quality Improvement* 25(9): 470-9.
- Fineout-Overholt, E. and L. Johnston (2005). "Teaching EBP: asking searchable, answerable clinical questions." *Worldviews Evid Based Nurs* 2(3): 157-60.
- Jerosch-Herold, C. (2005). "An evidence-based approach to choosing outcome measures: a checklist for the critical appraisal of validity, reliability and responsiveness studies." *British Journal of Occupational Therapy* 68(8): 347-53.
- Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from <http://www.cebm.net/index.aspx?o=1025>.
- Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.

Appendix I: Guideline Appraisal Form



LEGEND: Evidence Appraisal of a Single Study All Domains Guideline

Project/Topic of your Clinical Question: _____
Reviewer: _____ Today's Date: _____ Final Evidence Level: _____
Article Title: _____
Year: _____ First Author: _____ Journal: _____

Do the study purpose/objectives and inclusion/exclusion criteria assist in answering your clinical question?

☐ Yes ☐ No ☐ Unknown

- Study Purpose/Objective:
- Inclusion Criteria:
- Exclusion Criteria:

If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance:

CCHMC Evidence Experts: <http://groups/ce/NewEBC/EBDMHelp.htm>

Unfamiliar terms can be found in the LEGEND Glossary: <http://groups/ce/NewEBC/EBCFiles/GLOSSARY-EBDM.pdf>

SCOPE AND PURPOSE

1. Were the overall objective(s) of the recommendation specifically described? ☐ Yes ☐ No ☐ Unknown

Comments:

2. Were the health question(s) covered by the recommendation specifically described? ☐ Yes ☐ No ☐ Unknown

Comments:

3. Was the population (*patients, public, etc.*) to whom the recommendation is meant to apply specifically described? ☐ Yes ☐ No ☐ Unknown

Comments:

STAKEHOLDER INVOLVEMENT

4. Did the guideline development group include individuals from all the relevant professional groups? ☐ Yes ☐ No ☐ Unknown

Comments:

5. Were the views and preferences of the target population (*patients, public, etc.*) sought? ☐ Yes ☐ No ☐ Unknown

Comments:

Copyright © 2006-2012 Cincinnati Children's Hospital Medical Center; all rights reserved.

April 9, 2012

CCHMC Evidence Collaboration: James M. Anderson Center for Health Systems Excellence | Center for Professional Excellence | Edward L. Pratt Research Library

Evidence-Based Decision Making – www.cincinnatichildrens.org/evidence

Page 1 of 4

6. Were the target user(s) of the guideline clearly defined? ☐ Yes ☐ No ☐ Unknown
Comments:

RIGOR OF DEVELOPMENT

7. Were systematic methods used to search for evidence? ☐ Yes ☐ No ☐ Unknown
Comments:

8. Were the criteria for selecting the evidence clearly described? ☐ Yes ☐ No ☐ Unknown
Comments:

9. Were the strengths and limitations of the body of evidence clearly described? ☐ Yes ☐ No ☐ Unknown
Comments:

10. Were the methods used for formulating the recommendations clearly described? ☐ Yes ☐ No ☐ Unknown
Comments:

11. Were the health benefits, side effects, and risks considered in formulating recommendations? ☐ Yes ☐ No ☐ Unknown
Comments:

12. Was there an explicit link between the recommendations and the supporting evidence? ☐ Yes ☐ No ☐ Unknown
Comments:

13. Was the guideline externally reviewed by experts prior to its publication? ☐ Yes ☐ No ☐ Unknown
Comments:

14. Was a procedure for updating the guideline provided? ☐ Yes ☐ No ☐ Unknown
Comments:

CLARITY AND PRESENTATION

15. Were the recommendations specific and unambiguous? ☐ Yes ☐ No ☐ Unknown
Comments:

16. Were the different options for management of the condition or health issue clearly presented? ☐ Yes ☐ No ☐ Unknown

Comments:

17. Were key recommendations easily identifiable? ☐ Yes ☐ No ☐ Unknown

Comments:

APPLICABILITY

18. Did the guideline describe facilitators and barriers to its application? ☐ Yes ☐ No ☐ Unknown

Comments:

19. Did the guideline provide advice and/or tools on how the recommendations can be put into practice? ☐ Yes ☐ No ☐ Unknown

Comments:

20. Were the potential resource implications of applying the recommendations considered? ☐ Yes ☐ No ☐ Unknown

Comments:

21. Did the guideline present monitoring and/or auditing criteria? ☐ Yes ☐ No ☐ Unknown

Comments:

EDITORIAL INDEPENDENCE

22. Was the content of the guideline free from any influence of views of the funding body? ☐ Yes ☐ No ☐ Unknown

Comments:

23. Were competing interests of guideline development group members recorded and addressed? ☐ Yes ☐ No ☐ Unknown

Comments:

24. Would you include this guideline in development of a care recommendation? ☐ Yes ☐ No ☐ Unknown

Comments:

QUALITY LEVEL / EVIDENCE LEVEL

- Consider each "No" answer and the degree to which this limitation is a threat to the validity of the results, then check the appropriate box to assign the level of quality for this study/article.
- Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article.

☐ Good Quality Guideline [5a]
☐ Lesser Quality Guideline [5b]
☐ Not Valid, Reliable, or Applicable

Table of Evidence Levels																				
DOMAIN OF CLINICAL QUESTION	TYPE OF STUDY / STUDY DESIGN																			
	Systematic Review Meta-Analysis	Meta-Synthesis	RCT*	CCU*	Psychometric Study	Qualitative Study	Cohort - Prospective	Cohort - Retrospective	Case – Control	Longitudinal (Before/After, Time Series)	Cross – Sectional	Descriptive Study Epidemiology Case Series	Quality Improvement (POSA)	Mixed Methods Study	Decision Analysis Economic Analysis Computer Simulation	Guidelines	Case Reports N-of-1 Study	Bench Study	Published Expert Opinion	Local Consensus Published Abstracts
All Domains	1a 1b											4a 4b		2/3/4 a/b	5a 5b	5a 5b	5a 5b	5a 5b	5a 5b	5

Development of this form is based on:

1. The AGREE Collaboration. Appraisal of Guidelines for Research & Evaluation (AGREE) Instrument. www.agreecollaboration.org.
2. Guyatt, G., D. Rennie, et al. (2002). Users' guides to the medical literature: a manual for evidence-based clinical practice. Chicago, IL: AMA Press.
3. Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.
4. Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from <http://www.cebm.net/index.aspx?o=1025>.

Appendix J: Case-Control Appraisal Form



LEGEND: Evidence Appraisal of a Single Study Intervention Case-Control Study

Project/Topic of your Clinical Question: _____
 Reviewer: _____ Today's Date: _____ Final Evidence Level: _____
 Article Title: _____
 Year: _____ First Author: _____ Journal: _____

Do the study aim/purpose/objectives and inclusion/exclusion criteria assist in answering your clinical question?
☐ Yes ☐ No ☐ Unknown

• Study Aim/Purpose/Objectives:

• Inclusion Criteria:

• Exclusion Criteria:

Is a case-control study congruent with the author's study aim/purpose/objectives above?
☐ Yes ☐ No ☐ Unknown

Comments:

When reading the bolded questions, consider the bulleted questions to help answer the main question.
 If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance:

CCHMC Evidence Experts: <http://groups.ce/NewEBC/EBDMHelp.htm>
 Unfamiliar terms can be found in the LEGEND Glossary: <http://groups.ce/NewEBC/EBDFiles/GLOSSARY-EBDM.pdf>

VALIDITY: ARE THE RESULTS OF THE CASE-CONTROL STUDY VALID OR CREDIBLE?

1. Were the study methods appropriate for the question? ☐ Yes ☐ No ☐ Unknown

- Were the study methods clearly described (e.g., setting, sample population)?
- Were cases and controls matched appropriately for confounders or comorbidities?
- Were appropriate numbers of control participants matched to the case participants?

Comments:

2. Were instruments used to measure the outcomes valid and reliable? ☐ Yes ☐ No ☐ Unknown

- Were the instruments tested to be reliable?

Comments:

3. Were all appropriate variables (e.g., potential confounders, exposures, predictors) and interventions clearly described? ☐ Yes ☐ No ☐ Unknown

Comments:

4. Were all appropriate outcomes clearly described? ☐ Yes ☐ No ☐ Unknown

Comments:

5. Were all participants accounted for at the conclusion of the study? ☐ Yes ☐ No ☐ Unknown

- Were missing data explained?

Comments:

6. Was there freedom from conflict of interest? ☐ Yes ☐ No ☐ Unknown

- Sponsor/Funding Agency or Investigators

Comments:

RELIABILITY: ARE THESE VALID STUDY RESULTS IMPORTANT?

7. Were the statistical analysis methods appropriate? ☐ Yes ☐ No ☐ Unknown

- Were the statistical analysis methods clearly described?

Comments:

8. Did the study have a sufficiently large sample size? ☐ Yes ☐ No ☐ Unknown

- Was a power analysis described?
- Did the sample size achieve or exceed that resulting from the power analysis?
- Did each subgroup also have sufficient sample size (e.g., at least 6-12 participants)?

Comments:

9. What are the main results of the study? (e.g., Helpful data: Page #, Table #, Figures, Graphs)

- What is the effect size? (How large was the treatment effect?)
- What were the measures of statistical uncertainty (e.g., precision)?
(Were the results presented with Confidence Intervals or Standard Deviations?)

10. Were the results statistically significant? ☐ Yes ☐ No ☐ Unknown

Comments:

11. Were the results clinically significant? ☐ Yes ☐ No ☐ Unknown

- If potential confounders were identified, were they discussed in relationship to the results?

Comments:

12. Were adverse events assessed?

☐ Yes ☐ No ☐ Unknown

Comments:

APPLICABILITY: CAN I APPLY THESE VALID, IMPORTANT STUDY RESULTS TO TREATING MY PATIENTS?

13. Can the results be applied to my population of interest?

☐ Yes ☐ No ☐ Unknown

- Is the treatment feasible in my care setting?
- Do the patient outcomes apply to my population or question of interest?
- Are the likely benefits worth the potential harm and costs?
- Were the patients in this study similar to my population of interest?

Comments:

14. Are my patient's and family's values and preferences satisfied by the treatment and its consequences?

☐ Yes ☐ No ☐ Unknown

Comments:

15. Would you include this study/article in development of a care recommendation?

☐ Yes ☐ No ☐ Unknown

Comments:

ADDITIONAL COMMENTS OR CONCLUSIONS ("TAKE-HOME POINTS"):

QUALITY LEVEL / EVIDENCE LEVEL

- Consider each "No" answer and the degree to which this limitation is a threat to the validity of the results, then check the appropriate box to assign the level of quality for this study/article.
- Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article.

THE EVIDENCE LEVEL IS:

- ☐ Good Quality Case-Control Study [4a]
☐ Lesser Quality Case-Control Study [4b]
☐ Not Valid, Reliable, or Applicable

Table of Evidence Levels															
DOMAIN OF CLINICAL QUESTION	TYPE OF STUDY / STUDY DESIGN														
	Systematic Review Meta-Analysis	RCT*	CCT*	Qualitative Study	Cohort - Prospective	Cohort - Retrospective	Case - Control	Longitudinal (Before/After, Time Series)	Cross - Sectional	Descriptive Study Epidemiology Case Series	Quality Improvement (QI/SA)	Mixed Methods Study	Decision Analysis Economic Analysis Computer Simulation	Guidelines	Case Reports N-of-1 Study
Intervention	1a	2a	3a	4a	3a	4a	4a	4a	4a	4a	4a	2/3/4 a/b	5a	5a	5a
Treatment, Therapy, Prevention, Harm, Quality Improvement	1b	2b	3b	4b	3b	4b	4b	4b	4b	4b	4b	a/b	5b	5b	5b
															5

* RCT = Randomized Controlled Trial; CCT = Controlled Clinical Trial

Development for this appraisal form is based on:

- Guyatt, G.; Rennie, D.; Evidence-Based Medicine Working Group.; and American Medical Association.: Users' guides to the medical literature : a manual for evidence-based clinical practice. *Users' guides to the medical literature : a manual for evidence-based clinical practice*. "JAMA & archives journals." Chicago, IL, 2002
- Melnik, B. M. and E. Fineout-Overholt (2005). Evidence-based practice in nursing & healthcare : a guide to best practice. Philadelphia, Lippincott Williams & Wilkins.
- Lohr, K. N. and T. S. Carey (1999). "Assessing "best evidence": issues in grading the quality of studies for systematic reviews." *Joint Commission Journal on Quality Improvement* 25(9): 470-9.
- Fineout-Overholt, E. and L. Johnston (2005). "Teaching EBP: asking searchable, answerable clinical questions." *Worldviews Evid Based Nurs* 2(3): 157-60.
- Jerosch-Herold, C. (2005). "An evidence-based approach to choosing outcome measures: a checklist for the critical appraisal of validity, reliability and responsiveness studies." *British Journal of Occupational Therapy* 68(8): 347-53.
- Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from <http://www.cebm.net/index.aspx?o=1025>.
- Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.

Appendix K: Grading the Body of Evidence



LEGEND

Let Evidence Guide Every New Decision
Grading the Body of Evidence

Grade	Method				
High	Step 1 (see worksheet to summarize the body of evidence)	NUMBER OF STUDIES	QUALITY OF STUDIES*	CONSISTENCY OF RESULTS*	
		1	1a	NA	
		2+	1a or 2a	Yes	
		5+	1a, 2a, or 3a	Yes	
	5+	1a, 1b, 2a, or 2b	Yes		
Sufficient number of high quality studies with consistent* results	Step 2 (if the studies didn't fit neatly into a box in step 1)	<ul style="list-style-type: none">• <u>multiple</u> studies, unless large effect and very clinically important• <u>strong designs</u> for answering the question addressed• <u>clinically important and consistent</u> results with minor exceptions at most• <u>free of any significant doubts about validity</u> (generalizability, bias, design flaws)• <u>adequate statistical power</u> (including studies showing no difference)			
	Confirmation Step	Further research is unlikely to change our confidence in the answer to the clinical question.			
Moderate	Step 1 (see worksheet to summarize the body of evidence)	NUMBER OF STUDIES	QUALITY OF STUDIES*	CONSISTENCY OF RESULTS*	
		1	2a	NA	
		3+	1, 2, 3; a or b	Yes	
		5+	1, 2, 3, 4; a or b	Yes	
	A single well-done study or Multiple studies of lesser quality or with some uncertainty	Step 2 (if the studies didn't fit neatly into a box in step 1)	<div>Either</div> <ul style="list-style-type: none">• <u>multiple</u> studies• <u>strong designs</u> for answering the question addressed• <u>some uncertainty</u> due to either<ul style="list-style-type: none">• <u>validity threats</u> (generalizability, bias, design flaws or adequacy of statistical power) or• <u>inconsistency</u> <div>Or</div> <ul style="list-style-type: none">• <u>multiple</u> studies• <u>weaker designs</u> for answering the question addressed• <u>consistent</u> results with minor exceptions at most		
Confirmation Step		Further research is likely to have an important impact on our confidence in the precision of the answer to the clinical question, and may even change the answer itself.			
Low	Step 1 (see worksheet to summarize the body of evidence)	NUMBER OF STUDIES	QUALITY OF STUDIES*	CONSISTENCY OF RESULTS*	
		1+	Insufficient quality to meet Moderate criteria above	Yes	
		Local opinion or Published non-research articles	5	Yes	
	Studies with insufficient quality including case reports, case studies, general reviews, and local consensus	Step 2 (if the studies didn't fit neatly into a box in step 1)	<ul style="list-style-type: none">• <u>health professional opinion</u> is the only relevant published information• <u>local consensus</u> is clear• <u>uncertainty</u> due to either<ul style="list-style-type: none">• <u>validity threats</u> (generalizability, bias, design flaws or adequacy of statistical power) or• <u>inconsistency</u>		
		Confirmation Step	There is published and/or local consensus, but little or no research, to answer the clinical question. Further research is very likely to have an important impact on the answer.		
Grade Not Assignable	Step 1	NUMBER OF STUDIES	QUALITY OF STUDIES*	CONSISTENCY OF RESULTS*	
		0+	Any evidence level	No	
		Local opinion	5	No	
	Insufficient design or execution, too few studies, inconsistent results, and lack of consensus	Step 2 (if the studies didn't fit neatly into a box in step 1)	<ul style="list-style-type: none">• studies have not been done, or• published studies are <u>seriously flawed</u>, and/or• published studies give <u>inconsistent</u> results		
Confirmation Step		There is insufficient evidence and lack of consensus to answer the clinical question.			

*Note: When there is both high and low quality evidence and the results are inconsistent:

- Disregard lower quality evidence if the lower quality evidence is inconsistent with all higher quality evidence.
- Avoid disregarding lower quality evidence when inconsistency is at multiple quality levels, because bias could be introduced when determining which evidence to disregard.

Some of the concepts for this development are based on: Atkins et al: Grading quality of evidence and strength of recommendations. *BMJ*, 328(7454): 1490, 2004; Briss et al: Developing an evidence-based Guide to Community Preventive Services—methods. The Task Force on Community Preventive Services. *Am J Prev Med*, 18(1 Suppl): 35-43, 2000; & Greer et al: A practical approach to evidence grading. *Jt Comm J Qual Improv*, 26(12): 700-12, 2000.

Copyright © 2005-2012 Cincinnati Children's Hospital Medical Center; all rights reserved.

June 4, 2012

CCHMC Evidence Collaboration: James M. Anderson Center for Health Systems Excellence | Center for Professional Excellence |

Edward L. Pratt Research Library | Occupational Therapy & Physical Therapy | Hospital Medicine www.cincinnatichildrens.org/evidence

Appendix L: Judging the Strength of a Recommendation



LEGEND

Let Evidence Guide Every New Decision

Judging the Strength of a Recommendation

Project Title: _____ Date: _____

In determining the strength of a recommendation, the development group makes a considered judgment.

The judgment is made explicit in a consensus process which considers critically appraised evidence, clinical experience, and other dimensions. The development group will consider what the relative weight each dimension listed below contributes when determining the strength of a recommendation.

Reflecting on your answers to the dimensions below and given that more answers to the left of the scales* indicates support for a stronger recommendation, complete one of the sentences below to judge the strength of this recommendation.

*(Note that for negative recommendations, the left/right logic may be reversed for one or more dimensions.)

☐ It is strongly recommended that...

☐ It is recommended that...

☐ There is insufficient evidence and a lack of consensus to make a recommendation on...

Dimensions			
1. Grade of the Body of Evidence	<input type="checkbox"/> High grade evidence	<input type="checkbox"/> Moderate grade evidence	<input type="checkbox"/> Low grade evidence
2. Safety / Harm	<input type="checkbox"/> Has minimal adverse effects	<input type="checkbox"/> Has moderate adverse effects	<input type="checkbox"/> Has serious adverse effects
3. Benefit to target population (e.g., health benefit to patient)	<input type="checkbox"/> Has significant benefit	<input type="checkbox"/> Has moderate benefit	<input type="checkbox"/> Has minimal benefit
4. Burden on population to adhere to recommendation (e.g., cost, hassle, discomfort, pain, motivation, ability to adhere, time)	<input type="checkbox"/> Low burden of adherence	<input type="checkbox"/> Unable to determine burden of adherence	<input type="checkbox"/> High burden of adherence
5. Cost-effectiveness to healthcare system (e.g., balance of cost/savings of resources, staff time, supplies based on published studies/onsite analysis)	<input type="checkbox"/> Cost-effective to healthcare system	<input type="checkbox"/> Inconclusive economic effects	<input type="checkbox"/> Not cost-effective to healthcare system
6. Directness (the extent to which the body of evidence directly answers the clinical question [population/problem, intervention, comparison, outcome])	<input type="checkbox"/> Evidence directly relates to recommendation for this target population.	<input type="checkbox"/> There is some concern about the directness of evidence as it relates to the recommendation for this target population.	<input type="checkbox"/> Evidence only indirectly relates to recommendation for this target population.
7. Impact on morbidity, mortality, or quality of life	<input type="checkbox"/> High impact on morbidity, mortality, or quality of life	<input type="checkbox"/> Medium impact on morbidity, mortality, or quality of life	<input type="checkbox"/> Low impact on morbidity, mortality, or quality of life

Some of the concepts for this development based on:

Guyatt: Grading strength of recommendations and quality of evidence in clinical guidelines: report from an American College of Chest Physicians task force. *Chest*, 129(1): 174-81, 2006; Harbour: A new system for grading recommendations in evidence based guidelines. *BMJ*, 323(7308): 334-6, 2001; and Steinberg: Evidence based? Caveat emptor! *Health Aff (Millwood)*, 24(1): 80-92, 2005.

Copyright © 2005-2012 Cincinnati Children's Hospital Medical Center; all rights reserved.

June 11, 2012

CCHMC Evidence Collaboration: James M. Anderson Center for Health Systems Excellence | Center for Professional Excellence | Edward L. Pratt Research Library | Occupational Therapy & Physical Therapy | Hospital Medicine

www.cincinnatichildrens.org/evidence

Appendix M: Agency Permission Form

Wright State University-Miami Valley College of Nursing and Health

AGENCY PERMISSION FOR CONDUCTING DOCTORAL PROJECT

THE _____ GRANTS TO
_____, a student enrolled in the joint
Doctor of Nursing Practice Program at Wright State University—University of Toledo, the
privilege of using its facilities in order to conduct the following project:

The conditions mutually agreed upon are as follows:

- 1 The agency (may) (may not) be identified in the final report.
- 2 The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
- 3 The agency (wants) (does not want) a conference with the student when the report is completed.
- 4 Other:

Date

Signature of Agency Personnel/Title

Student Signature

Project Chair Signature

Appendix N: Wright State University IRB



Research and Sponsored Programs
201J University Hall
3640 Col. Glenn Hwy.
Dayton, OH 45435-0001
(937) 775-2425
(937) 775-3781 (FAX)
e-mail: rsp@wright.edu

HSR DETERMINATION LETTER

Date: May 7, 2018

PI: Tyler Green,
Doctor of Nursing Practice program

IRB #: 06427

Title: Improving Suicide Risk Assessment for an Inpatient Mental Health Hospital Unit

The Wright State University (WSU) IRB has reviewed your submission and determined that the activities described do not meet the definition of human subject research and therefore do not require IRB review and approval in accordance with WSU policy.

If you have questions regarding this determination, please contact Jodi Blacklidge at jodi.blacklidge@wright.edu or 937-775-3974.

Thank you,

The Wright State University IRB
OHRP #IRB00000034

Appendix O: Agency IRB

FWA:
IRB #:

DETERMINATION OF NOT RESEARCH

DATE: March 27, 2018

TO: Tyler Green, MSN

FROM: Institutional Review Board

IRB REFERENCE #: 18-024

STUDY TITLE: [1205800-1] Improving Suicide Risk Assessment for an Inpatient Mental Health Hospital Unit

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF NOT RESEARCH

DECISION DATE: March 27, 2018

REVIEW TYPE: Administrative Review

Thank you for your submission of the materials referenced above. The Institutional Review Board has determined this project does not meet the definition of human subject research according to federal regulations, and therefore does not fall under the purview of the IRB. In making this determination, the following items were reviewed:

- Application Form - Tyler D. Green Application for Project Evaluation (FO-307).rtf (UPDATED: 03/8/2018)
- Application Form - Tyler D. Green Key Personnel Addendum (FO-308).rtf (UPDATED: 03/8/2018)
- CV/Resume - CV.docx (UPDATED: 03/8/2018)
- CV/Resume - Deborah Poling CV.doc (UPDATED: 03/8/2018)
- CV/Resume - Tyler D. Green CV.doc (UPDATED: 03/8/2018)
- Training/Certification - Tyler D. Green CITI Completion Certificate.pdf (UPDATED: 03/8/2018)

Although the project is not subject to IRB oversight, HIPAA regulations and/or other federal, state, or institutional requirements may pertain to this project.

Since changes to the project may affect the project's determination as "not human subject research", please submit any revisions to the IRB for review prior to implementation. Thank you for submitting your proposal to the IRB for review and determination.

Should you have any questions or need further information, please contact . at 937- or

Appendix P: Barriers

Category	Stakeholder	Description of Barrier	Barrier Mitigation
Resources Individual Factor	Nurses	Workload – The staff face many challenges with time, including attending to client care/needs, administering medications, charting, and ensuring mental health client safety. Resistance may come from the addition of a risk assessment tool.	- Education on the NGASR was provided to nursing staff via an online computer module where nurses can view at their convenience. - Education was provided to nursing staff on ways to integrate the NGASR into daily routine to mitigate any increase in workload.
Attitude Individual Factor	Nurses	Nurses May Not See Benefit of Change – Despite many nurses on the unit being open to change, some nurses may feel the change is not beneficial or necessary.	- Education on the use and potential benefits of the NGASR was provided to nursing staff. - Clarification was provided to nurses regarding any misconceptions that may be held about the NGASR.
Attitude Individual Factor	Nurses	Nurses May Feel Comfortable With Their Current Routines and Not Want Change – Many nurses will develop a routine which they feel may help with organization and time management. Change to this routine introduces an element of uncertainty that can make nurses feel uncomfortable.	- Education was provided to nursing staff on ways to integrate the NGASR into daily routine. This may minimize impact on existing routines. - Plan, Do, Study, Act Cycle was used to facilitate change caused by implementation of the NGASR.

Appendix Q: Facilitators

Category	Stakeholder	Description of Facilitator	Facilitator Aid
Attitude Individual Factor	Nurses and Physicians	Supportive Culture – The nurses and physicians are client-centered and are generally open to learning more about EBP interventions. Nurses and physicians desire decreased liability and have discussed the need for a suicide risk assessment tool for practice.	- Support of the inpatient unit nurses assisted with intervention adoption. Education was provided to the nursing staff regarding the use of the NGASR via an online computer module.
Organizational Influences Organizational Factor	Unit Management	Administrative Support – The unit manager and nurse educator are supportive and encouraging of EBP implementation. Administration desires decrease liability resulting from mental health client harm and money saved from decrease in unnecessary use of safety sitters.	- Support of the inpatient unit manager and educator assisted with intervention adoption. Education was provided to mental health inpatient unit management regarding the NGASR and the plan for implementation.
Resources Organizational Factor	Unit Educator	Availability of Resources for Change – A unit nurse educator works with inpatient nurses and provides resources to keep them updated on changing hospital policies and EBP.	- Involvement of the existing unit educator can assist with intervention adoption. The implementation of the NGASR was discussed with unit educator to assess nursing learning needs.
Resources Organizational Factor	Unit Management	No to Low Economic Burden – The use of the NGASR can be completed after being printed on pages of paper.	- The low economic burden of using the NGASR was discussed with inpatient unit management. Interventions with low economic burden may be adopted easier than interventions with high economic cost.

Appendix R: DNP Project Economic Analysis

Item	Expense	2 Month Expense
Permission to use the NGASR for DNP project.	Free	Free
Permission to work with the nursing staff.	Free	Free
DNP project investigator's time.	Free	Free
Use of DNP project investigator's laptop computer and Microsoft® Office PowerPoint® program.	Free	Free
Paper printed for nursing survey and distribution of NGASR tool used by nursing staff during assessment of mental health clients.	7 reams @ \$4.99/ream	\$34.93
Total Expense		\$34.93
Item	ROI	2 Month ROI
Accurate assessment of suicide risk has the potential to reduce false positives of nursing staff rating high risk for mental health client self-harm, reducing unnecessary use and cost of safety sitters. The two months after the NGASR practice change saw a decrease in safety sitter use by 44.44% and a reduction in length of safety sitter use by 76.76%. The decrease in safety sitter use and cost may indicate correlational changes resulting from nurses using the NGASR or could result from lower mental health client acuity.	684.1 hours x \$15.93 = \$10,897.71	\$10,897.71
Total ROI		\$10,862.78

Appendix S: Outcome Measures

Outcomes to be Measured	Measurement Approach
1. Nursing perceptions about the process of changing from use of the no-suicide contract to the NGASR.	-Two months after providing nursing staff education on use of the NGASR, voluntary de-identified written responses to the prompt “Please share your opinion on the process of changing to move away from using the no-suicide contract and incorporating the NGASR into your nursing practice?” will be collected, compiled, and presented as a summary.
2. Nursing perceptions about how the NGASR was able to change their nursing practice and mental health client quality of care.	-Two months after providing nursing staff education on use of the NGASR, voluntary de-identified written responses to the prompt “Please share your opinion on how the NGASR was able to change your practice and the quality of care received by clients in the mental health inpatient hospital unit setting?” will be collected, compiled, and presented as a summary.
3. Length of time (in years) nursing staff have been performing suicide risk assessments as a nurse.	-Two months after providing nursing staff education on the use of the NGASR, voluntary de-identified written responses to the prompt “Please share how long you have been performing suicide risk assessments as a nurse” will be collected, compiled, and presented as a summary.
4. Frequency (safety sitters initiated) and length (in hours) of safety sitters used two months before and two months after providing education on the NGASR to nursing staff. To provide context of inpatient mental health hospital unit acuity, information on the total number of mental health clients admitted, average length of mental health client hospital stay, and completed suicides for inpatient mental health clients was collected for the two months before and two	-Information on frequency, length, number of inpatient mental health clients admitted, and average length of inpatient mental health client hospital stay to be collected and provided to DNP project investigator by inpatient mental health hospital unit nursing administration.

months after the nursing NGASR practice change.	
5. Cost of safety sitters assigned to mental health clients on the mental health inpatient hospital unit for two months before and two months after providing nursing education on the NGASR.	- The length in hours of safety sitters used two months before and two months after the intervention was multiplied by the organizational rate of pay for safety sitters to calculate changes in organizational cost that result from the practice change.

Appendix T: NGASR Paper Chart Form

<u>Static Factors During Hospital Stay:</u>	Date/Time:
Recent stressful life event (1)	
Family history of serious psychiatric problems or suicide (1)	
Recent bereavement or relationship breakdown (3)	
Widow/widower (1)	
History of psychosis (1)	
Prior suicide attempt (3)	
History of socio-economic deprivation (1)	
History of alcohol and/or substance misuse (1)	
Presence of terminal illness (1)	
STATIC FACTOR TOTAL	
<u>Dynamic Factors During Hospital Stay</u>	
Presence/influence of hopelessness (3)	
Evidence of persecutory voices/beliefs (1)	
Evidence of depression/loss of interest or loss of pleasure (3)	
Evidence of withdrawal (1)	
Warning of suicidal intent (1)	
Evidence of a plan to commit suicide (3)	
DYNAMIC FACTOR TOTAL	
NGASR SCORE (STATIC + DYNAMIC)	

Protective Factors

<input type="checkbox"/> Family support (e.g. visitors)	<input type="checkbox"/> Interpersonal social support
<input type="checkbox"/> Religious/Spiritual/Cultural beliefs	<input type="checkbox"/> Positive coping skills
<input type="checkbox"/> Future – oriented	<input type="checkbox"/> Motivated by mental health recovery
<input type="checkbox"/> Children at home	<input type="checkbox"/> Insight into problems
<input type="checkbox"/> Optimistic outlook	<input type="checkbox"/> Exercises regularly

An Evidence-Based, Patient-Centered Approach to Inpatient Suicide Risk Assessment

BY: TYLER D. GREEN, PMHNP-BC, WRIGHT STATE DNP STUDENT



Nurses' Global Assessment of Suicide Risk (NGASR)

- ▶ NGASR is a feasible evidence-based suicide risk assessment tool that has undergone empirical testing and has shown validity and reliability in the mental health inpatient setting. These elements are important for patient outcomes, accreditation, and legal reasons.

- ▶ Literature Supporting the NGASR

Cutcliffe & Barker, 2004; ENA, 2012; Facanha et al., 2016, Gramaglia et al., 2016; Kozel et al., 2016; RNAO, 2009; van Veen et al. 2015



Nurses' Global Assessment of Suicide Risk (NGASR)

- ▶ The NGASR shows distinction from other tools in that all variables are not considered equal predictors of risk (i.e. a specific plan for suicide would carry higher risk than thoughts of suicide).
- ▶ Intention of NGASR is to improve nursing clinical judgement to allow nurses to feel more confident in accurately assessing client suicide risk.



Nurses' Global Assessment of Suicide Risk (NGASR)

- ▶ Implemented in many countries (Australia, Canada, China, Germany, Holland, New Zealand, Portugal, UK, USA, and Switzerland) (Cutcliffe & Santos, 2012).
- ▶ Used in a variety of clinical settings (acute psychiatry, older adult psychiatry, substance use/misuse unit, community psychiatric nursing, and emergency rooms (Cutcliffe & Santos, 2012).
- ▶ NGASR is patient-centered. Patient cooperation is encouraged, but not required to obtain assessment.



Nurses' Global Assessment of Suicide Risk (NGASR)

- ▶ To address the complex, multifactorial elements of suicide, the NGASR incorporates fifteen items.
- ▶ Nine items are considered "static." These items will not change during the patient's hospitalization but are important to consider while providing patient care.
- ▶ Six items are considered "dynamic." These items can change during the patient's hospitalization and will likely decrease as the patient begins to feel better.
- ▶ The NGASR has a total possible score of twenty five. Levels of risk are divided into
 ≤ 5 = Low Risk 6-8 = Intermediate Risk 9-11 = High Risk ≥ 12 Very High Risk



NGASR Static Factor 1

- ▶ Recent stressful life event (1) (ex. job loss, financial worries, pending court action)
- ▶ "Can challenge and erode person's coping resources"
- ▶ With "stressful life events, the person may begin to think about suicide as a way of escaping such stress."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 2

► Family history of serious psychiatric problems or suicide (1)

- "May compound the person's sense of hopelessness and inevitability."
- "When significant family members have committed suicide, this can, inadvertently, serve as a social model for the person's hopelessness."
- This can "communicate a message that suicide is a viable means to solve intolerable life events, circumstances and/or stressors."
- Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 3

► Recent bereavement or relationship breakdown (3)

- A "commonality of unresolved bereavements appears to be a loss of hope,"
- "The person may be left feeling like ending his/her life and these feelings can be compounded by the concomitant loss of hope. This may particularly be the case when the bereaved was the person's primary source of human, interpersonal support."
- Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 4

- ▶ Widow/widower (1)
- ▶ "When a person is a widow/widower (or has lost a life partner), then the risk [of suicide] is slightly increased."
- ▶ "This is particularly the case if the person has not reached any 'resolution' to their bereavement or has not 'adapted' to their loss."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 5

- ▶ History of psychosis (1)
- ▶ Literature has demonstrated that with "a history of psychosis, the risk of suicide appears to be increased."
- ▶ "Although not all people who experience a psychosis also experience suicidal thoughts, the person's process of reasoning may be impaired/altered."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 6

- ▶ Prior suicide attempt (3)
- ▶ "Any indication or evidence of a prior suicide attempt is a significant indicator of current/future suicide risk."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 7

- ▶ History of socio-economic deprivation (1)
- ▶ Suicide is multifactorial event and can involve a person's environment.
- ▶ The literature indicates that "a history of socio-economic deprivation (e.g. poor housing, unemployment, low quality of life) appears to be associated with an increased risk of suicide."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 8

- ▶ History of alcohol and/or substance misuse (1)
- ▶ Studies "continue to suggest that a history of alcohol and/or substance misuse is associated with a higher risk of suicide."
- ▶ "This may particularly be the case when the concept of 'spontaneous act' suicides and people using alcohol/drugs in order to gain the courage to go through with the suicidal act, is taken into account."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Static Factor 9

- ▶ Presence of terminal illness (1)
- ▶ For this population suicide can be considered "either as a means of dealing with physical/psychological pain, or as a means of taking control, with a view to a 'dignified ending' to life, or as a way of dealing with the prospect of further holistic deterioration and loss."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Dynamic Factor 1

- ▶ Presence/influence of hopelessness (3)
- ▶ "A wealth of evidence exists to indicate that feelings of hopelessness are highly correlated with suicide risk."
- ▶ These "studies suggest that it is the feelings of hopelessness often associated with a depressive state, rather than the depressive state itself, which indicates a greater risk of suicide."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Dynamic Factor 2

- ▶ Evidence of persecutory voices/beliefs (1)
- ▶ When a person experiences auditory hallucinations that "take on a persecutory tone or content, this can contribute to a person's sense of hopelessness."
- ▶ "Some voices/beliefs may contain more explicit messages of self-harm or destruction."
- ▶ Suicide attempts resulting from persecutory voices/beliefs are "not overly common" but "may encourage a person towards suicide."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Dynamic Factor 3

- ▶ Evidence of depression/loss of interest or loss of pleasure (3)
- ▶ "Extensive literature has indicated the relationship between depression and suicide."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Dynamic Factor 4

- ▶ Evidence of withdrawal (1)
- ▶ Studies "have indicated that a withdrawal from interpersonal and social interactions can be associated with increased risk."
- ▶ "Changes in patterns of interpersonal and social interaction" "may be one of the first warning signs that the person is experiencing difficulty in maintaining the pattern of every day living."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Dynamic Factor 5

- ▶ Warning of suicidal intent (1)
- ▶ "Verbalization of suicidal intent is not always conclusive evidence of genuine intent," and "can be an expression of a different need."
- ▶ Even so, "such warnings should not be ignored" and can "be evidence of clients 'reaching out' for help."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Dynamic Factor 6

- ▶ Evidence of a plan to commit suicide (3)
- ▶ "Any evidence of a specific plan to commit suicide represents a major risk factor, especially if the person attempted to keep the plan a secret."
- ▶ Cutcliffe, J. R., & Barker, P. (2004).



NGASR Treatment Plan Guidelines

- ▶ Upon admission to the inpatient unit, twice daily thereafter, or more frequently as clinically indicated a behavioral risk assessment will be conducted by a registered nurse. The appropriate unit level observation will be based upon the scoring of the Nurses' Global Assessment of Suicide Risk. Clinical assessment and judgement can supersede the risk assessment score to identify individualized patient interventions and observation/unit level.
- ▶ A physician order is required for changes in observation level.
- ▶ Placement on a unit level observation is not viewed as punishment, but as a least restrictive measure to allow the patient to participate in the therapeutic milieu while addressing individual needs.



Intermittent Observation

- ▶ A patient scoring less than or equal to 8 will be placed on intermittent observation.
- ▶ The patient will be observed by staff at a minimum of every 15 minutes and at irregular intervals as needed.
- ▶ The nurse will talk with the patient upon admission and as needed to discuss the plan of care and why the healthcare team feels the patient will need this level of support. The nurse should advise the patient that a staff member will be checking on them throughout the day and night to ensure they are comfortable and check on their needs. The patient should be asked if they have any comments or questions.



One to One or Acute Adult Area

- ▶ When a patient scores between 9 and 11 on the NGASR they are considered to be a high level of risk and will be placed in the acute adult area. If the acute adult area is not available, then the patient will be placed on one to one or continuous camera monitoring.
- ▶ The nurse will talk with the patient upon admission and as needed to discuss the plan of care and why the healthcare team feels the patient will need this level of support. The nurse should advise the patient that a staff member will be with them or checking on them throughout the day and night to ensure they are comfortable and check on their needs. The patient should be asked if they have any comments or questions.



High Risk Support Plan

- ▶ When a patient scores 12 or higher on the NGASR they are considered to be a very high level of risk and will be placed on one to one continuous observation at all times.
- ▶ The nurse will talk with the patient upon admission and as needed to discuss the healthcare team's view of their current state of vulnerability and listen to the patient's view. Attempts should be made by the nurse to explain to the patient why the healthcare team members consider this to be the most appropriate form of care at this time. Arrangements will be made, as appropriate, to attempt to meet the patient's needs. The nurse should discuss the plan of care for the patient and ask the patient if they have any questions or comments. The High Risk Support Plan with identified interventions will be implemented.



Case Study 1

- ▶ Client J.D. is a 35 year old married African American female who presents voluntarily to the emergency department with her husband. J.D. endorsed longstanding feelings of depressed thinking and hopelessness, stating she recently had a plan to go to the gun range and kill herself with a rented gun. J.D. states she was unable to go through with her suicide plan due to her children, who live with her in her house. J.D. was unable to identify any particular stressor that may have contributed to the suicidal ideation. J.D. denies any past or present outpatient mental health treatment or medications. J.D. denies any personal history of suicide attempts or mental health inpatient hospitalizations. J.D. denies any family history of serious mental health problems or suicide. J.D. denies any past or present homicidal ideation or hallucinations. J.D. endorses daily alcohol use ("2-3 beers to take the edge off"). J.D. denies past or current use of other substances.



Case Study 1 Score

- ▶ **NGASR Score = 11**

- ▶ Client J.D. scores 11 related to her feelings of hopelessness (3), depressed thinking (3), warning of suicidal intent (1), plan to commit suicide (3), and alcohol misuse (1). It is worth noting this client's relationship with her children and husband can serve as an important protective factor against suicide.



Case Study 2

- ▶ Client C.G. is a 28 year old single, never married Caucasian male who is currently homeless. C.G. was brought involuntarily to the emergency department by paramedics from the downtown public library, where he voiced suicidal ideations to a library staff member. C.G. denies having a current plan for suicide but states that he has attempted suicide once previously as a teenager by cutting his wrist. C.G. reports that he has not been sleeping because there are "demons and wizards on the streets that will attack you if you're not careful." C.G. endorses feeling depressed, worthless, and hopeless regarding his situation. C.G. states he is not currently involved with mental health treatment or taking any mental health medications. C.G. states "marijuana is the only daily medication I need" and denies past or current use of alcohol or other substances. When discussing family history of mental health problems, C.G. states "I had an uncle who killed himself but nobody in the family talks about it."



Case Study 2 Score

- ▶ **NGASR Score = 15**
- ▶ Client C.G. scores 15 related to his feelings of hopelessness (3), depressed thinking (3), warning of suicidal intent (1), and prior suicide attempt (3). The case study also describes the client as having a history of psychosis (1) and the presence of persecutory beliefs (1). Finally, the case study describes the client as having a family history of suicide (1), socio-economic deprivation (1), and daily substance (cannabis) misuse (1).



Case Study 3

- ▶ Client T.R. is a 53 year old married Caucasian female who presents voluntarily to the emergency department with her sister. T.R. has a history of unspecified depressive disorder and opiate use disorder. Upon assessment T.R. shows evidence of a paranoid delusion that her husband is cheating on her and that there may be other women living in her home. T.R. reports currently hearing the voices of the women who are having an affair with her husband and insult her but does not appear to be responding to internal stimuli. T.R. denies any other hallucinations at this time. T.R. was overheard by family making statements that she would have to kill herself. T.R. admits to having suicidal thoughts but denies having any plan. T.R.'s sister states T.R.'s recent change in behavior started after T.R. began using methamphetamine. T.R. does not have a personal or family history of suicide attempts. T.R. reports a decrease in her sleep, decrease in appetite, fatigue, and difficulty concentrating. T.R. does report feeling depressed, but is hopeful that she would be able to "make it through this and save my marriage."



Case Study 3 Score

- ▶ **NGASR Score = 7**
- ▶ Client T.R. scores 7 related to her feelings of depression (3), thoughts of suicide (1), and substance (opiate, methamphetamine) misuse (1). The case study additionally mentions the client experiencing psychosis (1) and persecutory voices/beliefs (1).



Case Study 4

- ▶ Client M.C. is a 58 year old twice-married twice-divorced (last divorced 10 years ago) Caucasian female who presents involuntarily to the emergency department for psychosis. Per involuntary hold papers, the client is not caring for her own basic needs and presents in a deteriorated state. The client is verbally hostile and threatening and states she is in the hospital because she did not take a bath. M.C.'s case manager states the client was covered in feces when the case manager visited the client's apartment. M.C. reports she is having diarrhea from her psychotropic medications despite not taking the medications for over a month. M.C. further states she did not take a bath because someone is stalking her, watching her in her apartment, and "making fun of me through the air conditioning unit." M.C. was unable to identify this person. M.C. has poor eye contact and is alert and oriented to person, place, and time. M.C. is currently denying suicidal ideations, homicidal ideations, hallucinations, or a history of alcohol/substance use. M.C. denies a personal or family history of serious mental health problems. M.C. denies any current contact with family members or friends over the past few months.



Case Study 4 Score

- ▶ **NGASR Score = 3**
- ▶ Client M.C. scores 3 related to her experience of psychosis (1) and persecutory voices/beliefs (1). The case study additionally mentions the client has experienced recent social withdrawal (1).



Case Study 5

- ▶ Client E.W. is a 25 year old single, never married Caucasian female who presents voluntarily to the emergency department for suicidal ideations. E.W. reports being off many of her psychotropic medications and having suicidal thoughts with a plan to hang herself or cut her wrists. E.W. reports having depressed mood and thoughts of killing herself for the past two weeks, stating "Today seemed like a perfect day to do it." E.W. denies any recent stressful event contributing to her current feelings. E.W. denies homicidal ideation, hallucinations, and is currently taking Suboxone to manage her addiction to heroin. E.W. states she regularly meets with her counselor and has friends for social support. E.W. has good eye contact with a tearful affect when discussing her situation. E.W. reports having one previous suicide attempt in January 2018 by overdosing on Klonopin and heroin. E.W. denies a family history of serious mental health problems and is currently residing at her parent's home. E.W. is hopeful that being in the hospital will "get my mind straight."



Case Study 5 Score

- ▶ **NGASR Score = 11**
- ▶ Client E.W. scores 11 related to her feelings of depression (3), suicidal thoughts (1), suicidal plan (3) and previous suicide attempt (3). The case study also states the client has a history of substance (heroin) misuse (1).



Questions?

- ▶ Please feel free to forward any questions regarding the NGASR to

tyler.green@wright.edu



References

- ▶ Cutcliffe, J. R., & Barker, P. (2004). The nurses' global assessment of suicide risk (NGASR): Developing a tool for clinical practice. *Journal of Psychiatric and Mental Health Nursing*, 11(4), 393-400. doi: 10.1111/j.1365-2850.2003.00721.x
- ▶ Emergency Nurses Association. (2012). *Clinical practice guideline: Suicide risk assessment*. Retrieved from <https://www.ena.org/practice-research/research/CPG/Documents/SuicideRiskAssessmentCPG.pdf>
- ▶ Façanha, J., Santos, J. C., & Cutcliffe, J. (2016). Assessment of suicide risk: Validation of the nurses' global assessment of suicide risk index for the Portuguese population. *Archives of Psychiatric Nursing*, 30(4), 470-475. doi: 10.1016/j.apnu.2016.04.009



References

- ▶ Gramaglia, C., Feggi, A., Bergamasco, P., Bert, F., Gattoni, E., Marangon, D., ... & Zeppegno, P. (2016). Clinical characteristics associated with suicide attempts in clinical settings: A comparison of suicidal and non-suicidal depressed inpatients. *Frontiers in Psychiatry*, 7(109), 1-6. doi: 10.3389/fpsyt.2016.00109
- ▶ Kozel, B., Grieser, M., Abderhalden, C. & Cutcliffe, J. R. (2016). Inter-rater reliability of the German version of the global assessment of suicide risk scale. *International Journal of Mental Health Nursing*, 25(5), 409-417. doi: 10.1111/inm.12193
- ▶ Registered Nurses Association of Ontario. (2009). *Assessment and care of adults at risk for suicidal ideation and behaviour*. Retrieved from http://mao.ca/sites/mao-ca/files/Assessment_and_Care_of_Adults_at_Risk_for_Suicidal_Ideation_and_Behaviour_0.pdf



References

- ▶ van Veen, M., van Weeghel, I., Koekkoek, B., & Braam, A. (2015). Structured assessment of suicide risk in a psychiatric emergency service: Psychometric evaluation of the Nurses' Global Assessment of Suicide Risk scale (NGASR). *International Journal of Social Psychiatry*, 61(3), 287-296. doi: 10.1177/0020764014543311



Appendix V: Gantt Chart

Project Implementation Table

EBPI steps	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15
Step 1: Describe the problem <ul style="list-style-type: none"> Identify problem, stakeholders, barriers, and facilitators. Develop plan to address barriers. 	x	x	x	x											
Step 2: Formulate focused clinical question <ul style="list-style-type: none"> Develop PICOT question. 	x	x	x												
Step 3: Search for the evidence <ul style="list-style-type: none"> Identify key words and conduct review of the literature. 		x	x	x	x										
Step 4: Appraise and synthesize evidence <ul style="list-style-type: none"> Critically appraise, level, and grade evidence. 					x	x									
Step 5: Develop aim (goal) statement <ul style="list-style-type: none"> Develop Aim statements, defend proposal, and complete IRB application. 							x								
Step 6: Plan-Do-Study-Act cycles <ul style="list-style-type: none"> Provide education to nurses, implement change, study effects of change, and incorporate knowledge gained. 								x	x	x	x	x	x		
Step 7: Dissemination of best practices <ul style="list-style-type: none"> Final project defense. 														x	x

IRB = Institutional Review Board, M = month, PICOT = Population, Intervention, Comparison, Outcome, Time